AUGUST 1, 1955

MODERN MEDICINE

The Journal of Diagnosis and Treatment

ANATOMIC FACTORS IN BILIARY TRACT SURGERY

by Dr. Manuel E. Lichtenstein

Table of contents page 2

in hypertension

Nitranitol
with
Rauwolfia

tandem action for safe, gradual, prolonged relief

Nitranitol for prompt relief of distressing symptoms... slower acting Rauwolfia for prolonged hypotensive and quieting action--no lag in symptom relief. The combination means normal life sooner for your essential hypertensives... no jolting of the vasomotor reflexes... side effects are uncommon.

write: **Nitranitol R.S.**

RAUWOLFIA SERPENTINA

for a more normal life sooner for your hypertensive patient

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Since 1828

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Depropanex.

DEPROTEINATED PANCREATIC EXTRACT

relieves vasospasm, restores activity

MAJOR ADVANTAGES: Relieves pain by relieving spasm. Acts directly on smooth muscle. Non-narcotic. Nontoxic.[1]

In intermittent claudication associated with occlusive arterial disease, continuing treatment with DEPROPANEX prolongs the claudication time to an average of more than three times that of the control tests[1]—may markedly increase walking distance.

DEPROPANEX helps relieve pain of renal and biliary colic, and ureteral spasm. Postoperatively, it controls paralytic ileus.

Supplied: in 10-cc. and 30-cc. rubber-capped vials. Dosage schedules in package circular.

REFERENCES: 1. Am. Heart J. 18:425, 1939.

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MODERN CONTENTS

Volume 23
Number 15

MODERN MEDICINE

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DEPARTMENTS

SPECIAL ARTICLE

MEDICINE

MEDICINE
for August 1, 1955

Walter C. Alvarez
Editor-in-Chief

●

THE MAN ON THE COVER is Dr. Manuel E. Lichtenstein of Chicago, Professor of Surgery at Cook County Graduate School of Medicine and Associate Professor of Surgery at Northwestern University Medical School. Dr. Lichtenstein is attending surgeon at Cook County, Michael Reese, and Norwegian-American hospitals. He is also a diplomate of the American Board of Surgery and a fellow of the American College of Surgeons. A special article by Dr. Lichtenstein, "Anatomic Factors in Biliary Tract Surgery," appears on page 73.

CONTINUED

Contents for August 1 1955

depression *and* obesity

often go hand in hand

Your obese patients are often depressed. Indeed, you may find that the reason for their obesity is a depression that drives them to overeating—just as other patients may be driven to drinking.

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dextro-amphetamine sulfate, S.K.F.

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brand of sustained release capsules

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the originators of sustained release oral medication

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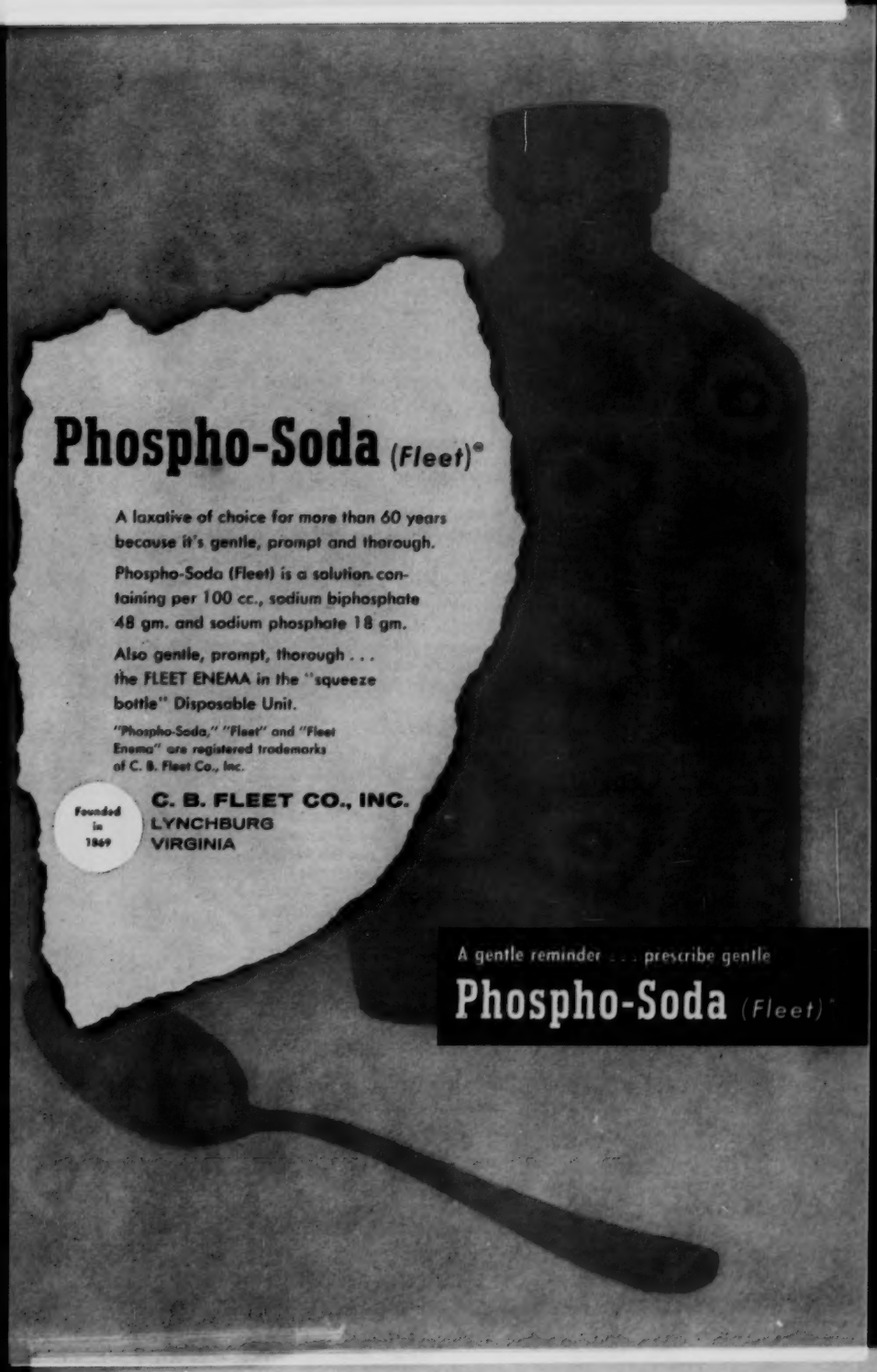
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A laxative of choice for more than 60 years because it's gentle, prompt and thorough.
Phospho-Soda (Fleet) is a solution containing per 100 cc., sodium biphosphate 48 gm. and sodium phosphate 18 gm.
Also gentle, prompt, thorough . . . the FLEET ENEMA in the "squeeze bottle" Disposable Unit.
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C. B. FLEET CO., INC.
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A gentle reminder . . . prescribe gentle
Phospho-Soda (Fleet)®

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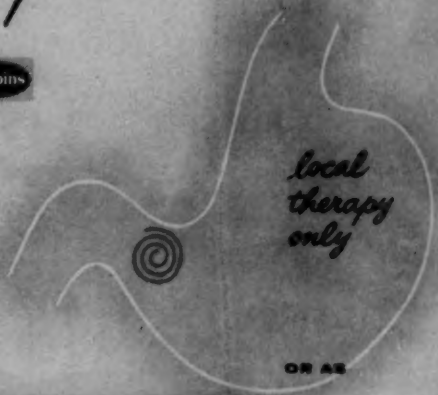
Contents for August 1 1955

for peptic ulcer

ROBALATE®

provides two-way protection, with an antacid-demulcent action superior in many ways to that of dried aluminum hydroxide gel. It is 42% more efficient in acid-consuming power[2]...more rapid in its neutralizing action[1]...is not inhibited by pepsin[3]...does not disturb bowel activity[4] ...and its effectiveness is not diminished by age.[3]

Each tablet contains:
Dihydroxy aluminum aminoacetate....0.5 Gm.



OR AS EACH CASE MAY REQUIRE

- blocks acid erosion
- blocks local irritation
- blocks a hyperactive vagus
- blocks emotional tension

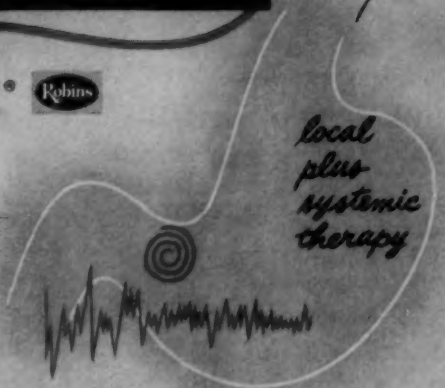
DONNALATE®

provides four-way protection, with Robalate's superior antacid-demulcent action, plus Donnatal's recognized spasmolytic-sedative effectiveness.

Each tablet contains:

Dihydroxy aluminum aminoacetate	0.5 Gm.
Hyoscyamine sulfate	0.052 mg.
Atropine sulfate	0.010 mg.
Hyoscine hydrobromide	0.003 mg.
Phenobarbital (⅛ gr.)	8.1 mg.

(Each Donnalate tablet = 1 Robalate tablet + ½ Donnatal tablet)



Both Robalate and Donnalate are *free from grittiness* and the chalky feeling usually associated with many antacids...*free from side effects,* such as systemic alkalosis and disturbance of bowel activity.

DOSAGE: 1 or 2 tablets after each meal and before retiring, or as directed.

SUPPLY: Bottles of 100 and 500 white (Robalate) or yellow (Donnalate) tablets.

REFERENCES: 1. Hammarlund, E. R., Rising, L. W., J. Am. Pharm. Assn. (Sci. Ed.), 38:386, 1949. 2. Kranz, J. C. Jr., et al., J. Pharmacol. Exper. Therap. 82:247, 1944. 3. Murphey, E. S., J. Amer. Pharm. Assn. 41:361, 1952. 4. Bowling, J. R., et al., Rev. Gastroenterol. 16:836, 1949.

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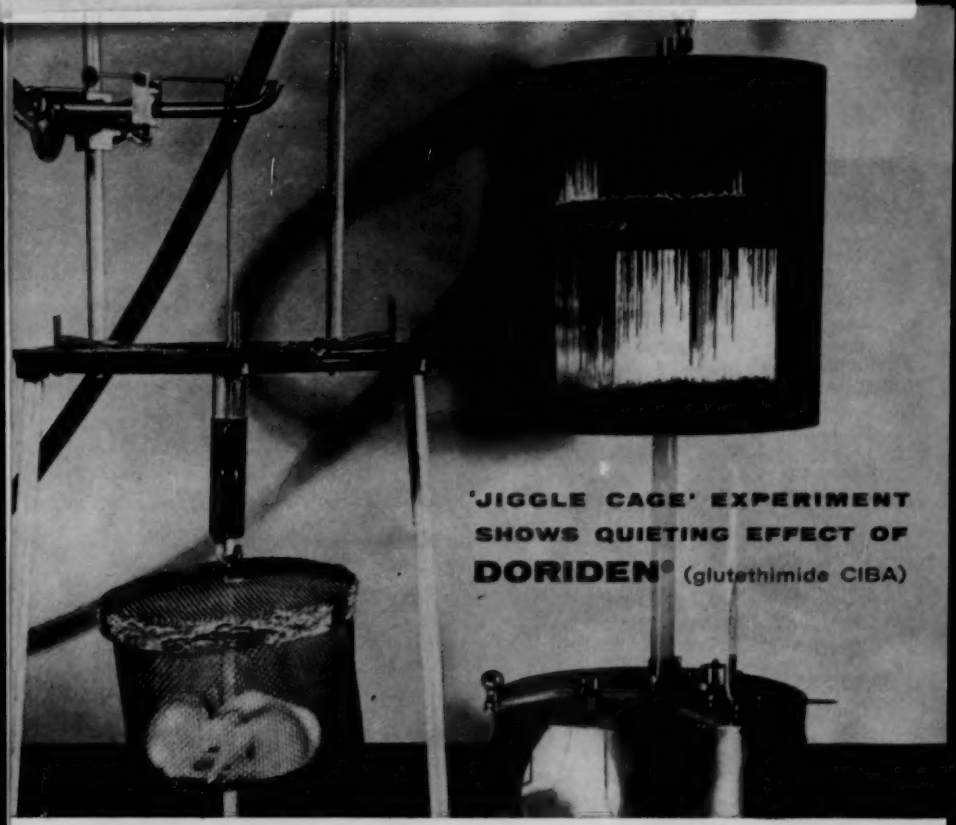
MODERN MEDICINE

Therapeutic Index

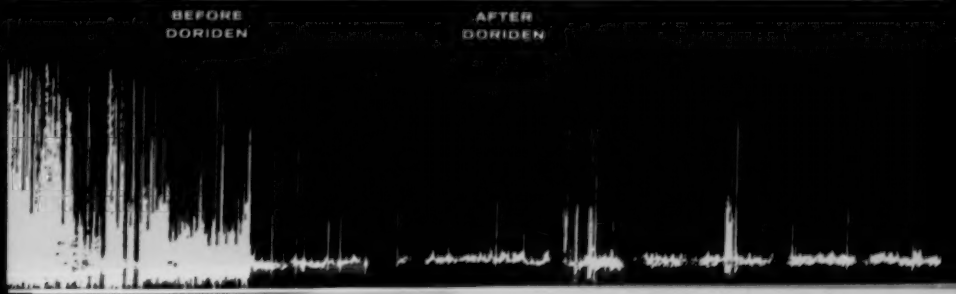
for August 1, 1955

THIS INDEX, prepared for your convenience, lists all advertised products. Some products may be specifically indicated for more than one category, but space restricts listings to one category only. Details concerning the use of these products may be had by referring to pages listed, or by writing the manufacturer.



That **DORIDEN**—a totally new nonbarbiturate hypnotic and sedative—is effective as a quieting agent is demonstrated by this pneumatic movement recorder (jiggle cage), which measures the activity of laboratory animals. Note the marked change in the activity of mice after the administration of DORIDEN. Further evidence of the sedative and hypnotic effectiveness of DORIDEN is provided by numerous clinical studies. DORIDEN acts in 15 to 30 minutes and affords 4 to 8 hours of sound refreshing sleep. Present clinical evidence indicates it is not habit forming.

Tablets (white, scored), 0.25 and 0.5 Gm. **C I B A** SUMMIT, N. J.



When there's doubt about GOUT...

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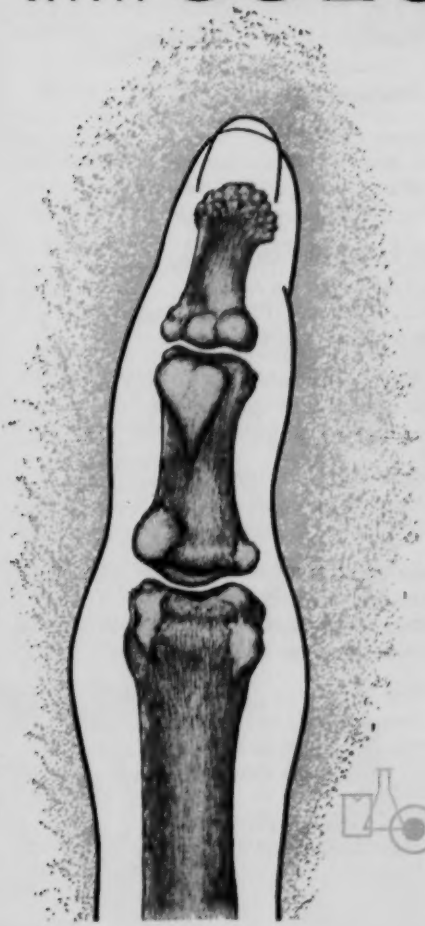

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Prevention of
GOUTY ARTHRITIS

The singularly dramatic response of gouty arthritis to colchicine makes this drug a quick, effective diagnostic tool[1] as well as a choice therapeutic agent. When signs and history are absent or confusing, NEOCYLATE* with COLCHICINE resolves the doubt and simultaneously provides the immediate analgesic effect of colchicine with potentiated salicylate.

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p-Aminobenzoic Acid	0.25 Gm. (4 gr.)
Ascorbic Acid	20 mg. (1/3 gr.)
Colchicine	0.25 mg. (1/250 gr.)

Supplied: Bottles of 200, 500, and 1000 yellow, enteric-coated tablets.

1. Talbott, J. H.: Postgrad. Med. 5:386, May, 1949.

Literature on request

THE CENTRAL PHARMACAL COMPANY
Products Born of Continuous Research
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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

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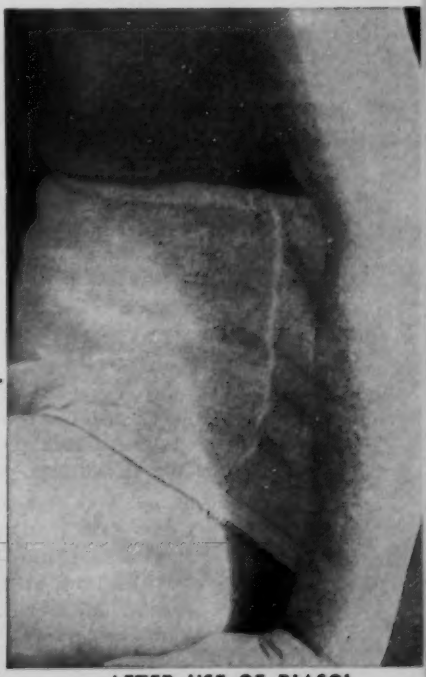

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RIASOL FOR PSORIASIS

MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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- In severe cases, Raudixin may be combined with more powerful drugs. It often enhances the effect of such drugs, permitting lower dosages.
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DOSAGE: 100 mg. b.i.d. initially; may be adjusted as necessary.

SUPPLY: 50 and 100 mg. tablets, bottles of 100 and 1000.

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LETTER FROM THE EDITORS

Dear Reader:

A few week ends ago one of our colleagues was inveigled into going grocery shopping with his wife. Up to that time he had thought of groceries only as material delivered into the kitchen as a necessary preliminary for a meal. He came back from his shopping trip with a variety of appetizing items, a lighter wallet, and tremendous enthusiasm.

The supermarkets impressed him as wonderful places where in a few minutes his wife could select the things that met her particular needs from products from all over the world. The grocer had done the scouting for her and had displayed each item to its best advantage so that she could quickly make up her mind as she strolled down the aisles.

The thought occurred to us that in some ways a magazine resembles the supermarket, the wares being ideas instead of comestibles. The reader browses among the ideas. He spends more time in the medicine section or the obstetrics section according to his particular interest, but he is exposed to the whole array and often finds something that piques his interest in a section he would not normally seek out. Like the housewife, he accepts and rejects, but he comes away with a new awareness that he has the whole world at his finger tips.

The editors arrange this journal so that the reader is given every aid in finding the subjects he is looking for. The articles are grouped by specialties. A complete table of contents, starting on page 2, lists all the articles and tells him where to find each one. He can spend as little or as much time as he wishes and yet be assured of finding what he seeks. Each article has been carefully chosen so that his reading time will be rewarding.

The Editors

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Gasoline on the Fire

TO THE EDITORS: I have just finished reading Dr. Frank Riggall's letter on breast cancer *(Modern Medicine,* May 15, 1955, p. 26). I agree with his conclusions 100%. We of the medical profession, and I think particularly the surgeons, are too prone to follow blindly what some big name surgeon says and does. For the past twenty years, I have been preaching to interns, when they would listen, the same kind of story Dr. Riggall tells in his letter. I have been referred to as a crackpot, and while I have always told these young doctors that I did not suggest they do as I said or did, at least it was food for thought.

I have not done a radical breast operation in some fifteen years, and I never intend to do another one. A simple mastectomy, without axillary dissection, is all I ever do. Postoperatively the breast area is given deep x-ray therapy, but I very much question its efficiency.

If we are honest with ourselves, I feel that any time we see a woman with a nodule in her breast and visible or palpable axillary glands, we will realize that this individual is an inoperable case. It is my belief that if we do nothing, the chances are that the patient will survive as long, if not longer, than if we operated. I have come to the conclusion that radical cancer surgery can be best likened to pouring gasoline on a fire.

I know I am in a minority group, but I have been in this group for twenty years, and until someone convinces me of my error I am going to remain there. I have never had the courage, as Dr. Riggall has had, to publish my thoughts. It could be that both of us are wrong, but based upon my experience I believe that we are both right.

LEO A. WILL, M.D.

St. Louis

Kindly Omission

TO THE EDITORS: Diagnostix is always a fascinating part of *Modern Medicine.*

Regarding Case MM-288 in the June 1, 1955 issue (p. 194), I felt pleased in having assumed the diagnosis from the Clue. I was quite concerned, however, when no mention was made of radiologic consultation, since the attending and visiting physicians and the surgeons had missed the diagnosis. A good radi-

a local anesthetic

that has come

*so far . . . so fast**

XYLOCAINE® HCl

(Brand of lidocaine* hydrochloride)

ASTRA

Council Acceptance is your assurance of high professional standards.

*U.S. PAT. NO. 2,441,498

In a recent summary* of the local anesthetics at present available to clinicians, Xylocaine is described as being one of the most satisfactory. At the same time it has been hailed as a significant rival to procaine, its relatively recent introduction notwithstanding.

*Gray, T. C. and Geddes, I. C., J. Pharm. and Pharmacol., 6:89-114 (February) 1954

Write for 200 reference bibliography available to physicians on request.

ASTRA PHARMACEUTICAL PRODUCTS, INC.
Neponset Street Worcester, Mass.

ologist usually makes the diagnosis of air in the biliary tree. Possibly the reason that preoperative diagnosis of gallstone obstruction is not often made is because the radiologist is not consulted. It is possible that in this case he missed it, and you kindly left that observation out.

This case should have been a good example of how to use proper consultation. Certainly many physicians still need such education.

MERRELL A. SISSON, M.D.
San Francisco

Old Names or New?

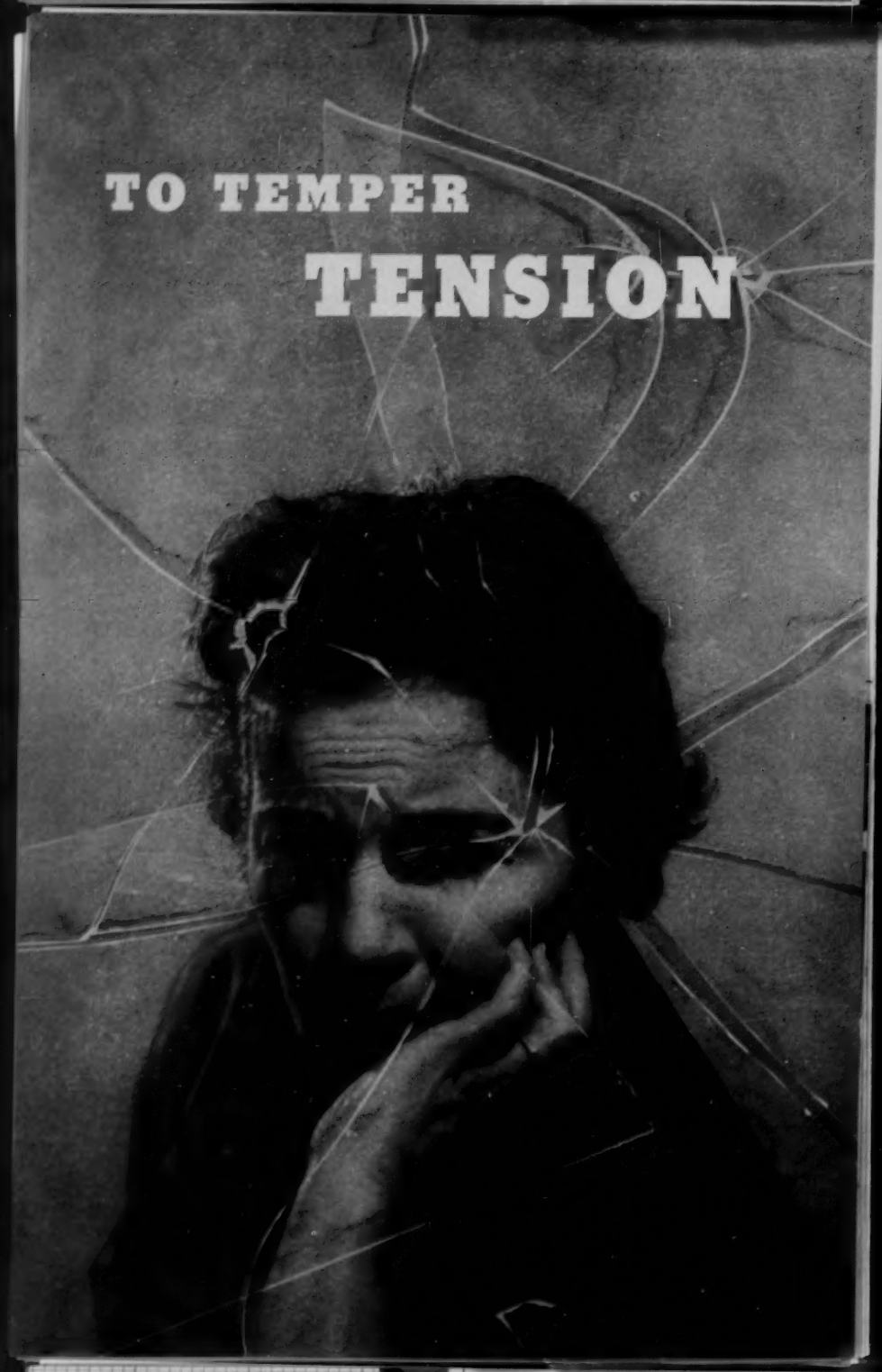
TO THE EDITORS: In an interesting editorial on helpful ideas in using drugs, Dr. Alvarez writes: "When a physician is using a new drug that is known to have some toxic side reactions and perhaps a tendency to accumulate in the body, it may be a good idea to insist that the patient take the medicament intermittently, perhaps three days on and a day off, or two weeks on and a week off" *(Modern Medicine,* Jan. 1, 1955, p. 73).

This mode of administration has long been described in the German medical literature under the name *Stosstherapy* or simply *Stoss.*

The editorial also mentioned Ehrlich's method of treatment of syphilis. Ehrlich called his method *therapia sterilisans magna.*

I wonder if we should not continue to use such technical terminology for long-known procedures

(Continued on page 26)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New Butiserpine is a timely approach to treatment of the many conditions where cardiovascular and nervous tension may be concurrent.

Butiserpine includes the outstanding, complementary drugs:

RESERPINE (0.1 mg.)
relieves tension and produces a moderate hypotensive effect.

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acts on the higher cortical centers to produce mild "intermediate" sedation. May be administered over prolonged periods without hazard of accumulation associated with other barbiturates such as phenobarbital.[1]

BUTISERPINE ***will be found most useful in:***
Mild to moderate hypertension; coronary occlusion; angina pectoris, congestive heart failure; anxiety and tension states and for the premenstrual and menopausal syndromes. May be used in conjunction with more potent hypotensive agents when indicated.

Tablets Butiserpine, bottles of 100 and 1000.

*Trade mark

1. Butler T. C.; Mahaffee, C., and Waddell, W. J.: Phenobarbital: Studies of Elimination, Accumulation, Tolerance, and Dosage Schedules, J. Pharmacol. & Exper. Therap. 111:425 (Aug.) 1954.

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LABORATORIES, INC.
PHILADELPHIA 32, PA.

instead of describing as new discoveries made by earlier generations.

JOHN LANZKRON, M.D.
Middletown, N.Y.

Restricted Application

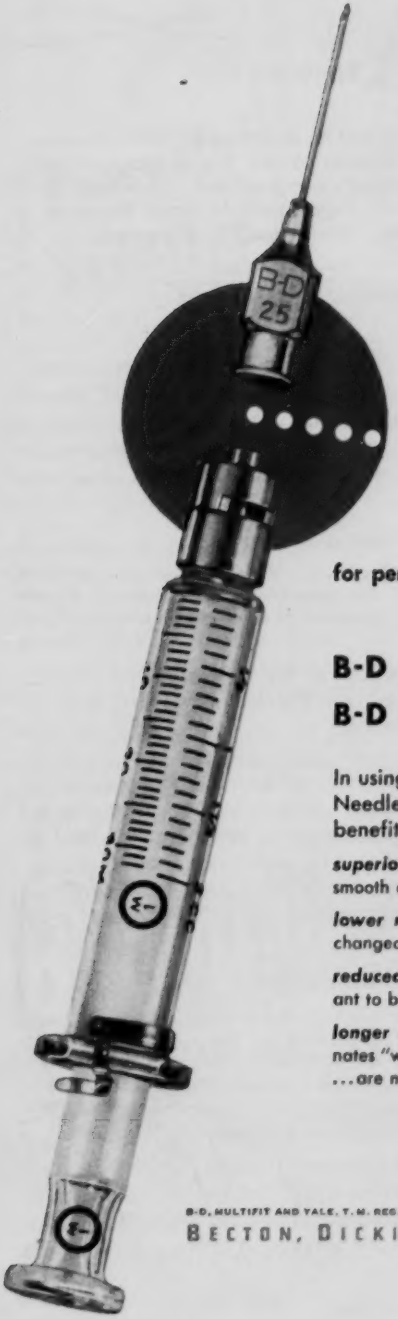
TO THE EDITORS: In answer to a question regarding constipation in pregnancy (*Modern Medicine*, July 1, 1955, p. 42), the consultant in obstetrics says: "Enemas are preferable to cathartics during pregnancy."

Was this statement taken out of context?

M. B. SINYKIN, M.D.
Minneapolis

¶ A qualifying phrase was inadvertently omitted. The statement from the consultant was: "Enemas are preferable to cathartics during the balance of this pregnancy."—Ed.

"Remember men—make every shot count!"



precision fit...

for performance • convenience • economy

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In using B-D MULTIFIT Syringes with B-D YALE Needles, you are assured all these important benefits:

superior performance—no leaking or jamming, uniformly smooth operation, minimum discomfort for your patients

lower replacement costs—syringe parts are truly interchangeable; needles rust-resistant throughout for longer life

reduced breakage—syringe barrel is stronger, more resistant to breakage

longer life—unground, clear glass barrel virtually eliminates "wear-out" due to friction; needles hold a sharp point ...are made to withstand rugged use.

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RUTHERFORD, N. J.

B-D

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

Congenital Hydrocele

QUESTION: A 9-month-old boy has a congenital hydrocele about 2 in. in diameter. The tumor was first noticed two or three months ago and has not increased since then. Is treatment necessary?

M.D., Illinois

ANSWER: *By Consultant in Pediatric Surgery.* Aspiration or surgical excision of the hydrocele is not necessary unless a hernia coexists. Hydroceles are very common up to 2 years of age and usually regress spontaneously without treatment. However, the patient should be carefully observed. If the tumor persists or interferes with walking, surgical removal is indicated.

Viability of Bacteria

QUESTION: I have 3 patients with severe disseminated, recurrent furunculosis who have received intensive therapy with antibiotics in the past. Can antibiotic-resistant staphylococci live on the skin and flare up later as furunculosis?

M.D., District of Columbia

ANSWER: *By Consultant in Dermatology.* Furunculosis as the result of antibiotic-resistant staphylococci is unlikely. However, recent studies suggest that persons constantly exposed to hospital environment may acquire antibiotic-resistant coccal organisms. Whether these exist as persistent flora for weeks or months is conjectural.

Tattoo Removal

QUESTION: What is the best method for removing tattoo marks? Would planing of the skin be effective?

M.D., Illinois

ANSWER: *By Consultant in Dermatology.* Tattoo marks are best removed by totally excising the segments and suturing the edges by primary closure. If this cannot be done, then full- or split-thickness graft may be beneficial. Planing of the skin with abrasives is inadequate, as the pigment is usually in the dermis.

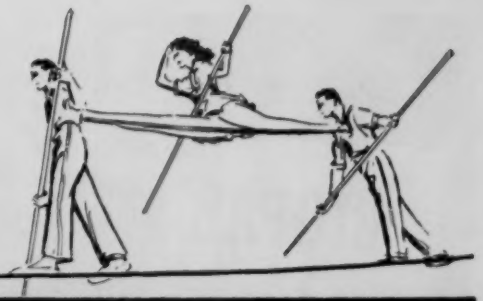
Gofman Index

QUESTION: What is the significance and reliability of the Gofman index in the prognostication of coronary diseases?

M.D., California

ANSWER: *By Consultant in Internal Medicine.* Persons who have had myocardial infarction may have atherosclerosis involving the coronary arteries. Gofman and others

A Powerful Sedative



with Three Combined Actions

Bromidia is a synergistic combination of three active ingredients. Hence it is more effective than any of these drugs used singly

Here are the triple benefits your patient receives when you prescribe Bromidia

First, the chloral hydrate produces physiological sleep within the hour without hangovers or after-effects.

Second, the potassium bromide steps up and prolongs the beneficial action of chloral hydrate.

Third, the extract of hyoscyamus tranquillizes the nervous system and helps restore poise

Each fluid ounce of Bromidia contains chloral hydrate 91 grains, potassium bromide 91 grains and extract of hyoscyamus 1 grain. This is a tested formula which has been prescribed for many years by thousands of physicians.

Bromidia is a favorite prescription for severe insomnia. It often proves effective in cases where barbiturates and bromides have failed. It may be used to produce sleep regardless of etiology. Bromidia is equally effective whether insomnia is due to worry, emotional upsets, fevers, alcoholism or insanity.

The recommended dose of Bromidia for insomnia is 1 to 2 teaspoonfuls on retiring. As a sedative, ½ to 1 teaspoonful up to three times daily. Maximum daily dosage 3 teaspoonfuls.

Available at all pharmacies in 4 fld. oz. and 1 pint prescription bottles.

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Please send me professional literature and sample of BROMIDIA.

..... M.D.

ADDRESS .....

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have shown that the low density lipoproteins in these individuals occur in concentrations considerably greater than normal. Therefore, the S_f 10-20 lipoproteins may be used as a possible index for coronary artery occlusion.

Evidence is incomplete but suggests that such an index is not a definitive method to determine a coronary occlusion. Some persons with very high indexes may live for many years with no evidence of coronary disorder and others with normal indexes may have coronary occlusion. However, a high index is usually associated with a tendency to coronary atherosclerosis.

Antigen Therapy

QUESTION: A patient has been receiving injections of tobacco-smoke antigen at fourteen-day intervals for six years. In view of the possible carcinogenic effect of tobacco smoke, is this prolonged therapy dangerous?
M.D., New York

ANSWER: *By Consultant in Allergy.* The repeated injection of tobacco-smoke antigens in this patient is not harmful if the inoculation sites are rotated.

Laxative action... *suited to his routine*

Relief of temporary constipation: Agoral is suited to the acutely constipated patient who can neither take time off for a "purge," nor time-out to answer the sudden urge induced by strong laxatives: the head of a one-man business; the executive committed to a day of important conferences; the bus driver on a long haul; people in the theatre, the pulpit, the factory, the home. For all who need relief of temporary acute constipation, pleasant tasting Agoral provides positive results without urgency.

No urgency; evacuation which adjusts to schedule: A dose taken at bedtime almost invariably produces results the following day. Elimination is comfortably achieved by mild, positive peristaltic action, not by violent paroxysms of unrestrained hyperperistaltis.

No griping; interim discomfort avoided: Agoral's action is sustained uniformly during its passage through the intestinal tract; and it causes no uncomfortable griping, embarrassing flatulence, distention or stomach distress.

Dosage: On retiring, ½ to 1 tablespoonful taken in milk, water, juice or miscible food. Repeat if needed the following morning two hours after eating. Contraindications: symptoms of appendicitis; idiosyncrasy to phenolphthalein.

Supplied: bottles of 6, 10 and 16 fluid-ounces; and as Agoral Plain (without phenolphthalein), bottles of 6 and 16 fluid-ounces.

Agoral®

mineral oil emulsion with phenolphthalein

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Forensic Medicine

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Prepared especially for Modern Medicine

Compensation—*Jaundice*

PROBLEM: Jaundice of an employee was caused or aggravated by surgical and medical treatment for an injury that occurred during work. Was the worker entitled to workmen's compensation benefits for treatment of the disease?

COURT'S ANSWER: *Yes.*

So decided the Oklahoma Supreme Court (281 Pac. 2d 944).

Insurance—*Total Disability*

PROBLEM: A company group life insurance policy provided for payment if an employee died within one year after ceasing to work and was uninterruptedly and totally disabled from termination of employment to the date of death. A worker died three months after stopping work but did light painting for another employer for nearly four weeks in the interval. Were insurance payments due?

COURT'S ANSWER: *Yes.*

The Appellate Division of the New Jersey Superior Court said that disability was substantially continuous and total since the worker could not pursue his regular occupation (113 Atl. 2d 28).

Testimony—*Weight*

PROBLEM: The question in an unemployment compensation proceeding was whether an employee was justified in quitting work because of a neurosis caused by the confining character of the work. Was the testimony of the medical witness for the claimant vulnerable because the expert relied upon the employee's statements?

COURT'S ANSWER: *No.*

The Arkansas Supreme Court recognized that ailments are not always manifest outwardly. The employer's witness, a psychiatrist, had not examined the employee and relied upon a factual statement furnished by the employer (275 S.W. 2d 12).

Testimony—*Radiograms*

PROBLEM: Could a medical expert witness testify at a murder trial as to what roentgenograms made by another physician showed, if the films were properly identified?

COURT'S ANSWER: *Yes.*

So decided the North Carolina Supreme Court (86 S.E. 2d 916).

License—*Pressure Recording*

PROBLEM: Could a county tax collector in Florida refuse to issue an occupational license for taking blood pressure readings to an applicant who did not give medical advice or prescribe or administer treatment?

COURT'S ANSWER: *No.*

So decided the Florida Supreme Court (77 So. 2d 869).

Sheep bring sleep to a few ...

but relaxation brings sleep to almost everyone. Noludar relaxes your patient and usually induces sleep within one half to one hour, lasting 6 to 7 hours. Clinical studies on more than 3,000 patients have demonstrated the usefulness of Noludar for the relief of nervous insomnia and daytime tension. Noludar 'Roche' is not a barbiturate. Noludar™

-- brand of methyprylon (3,3-diethyl-5-methyl-2,4-piperidinedione)

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Disease—*Occupational*

PROBLEM: Varicosity of a civilian army employee was aggravated by walking and standing required by her work. Could the disorder be considered an occupational disease, allowing the woman to enter an army hospital and, later, to sue the government for alleged negligent treatment?

COURT'S ANSWER: *Yes.*

So decided the United States Court of Appeals, Ninth Circuit (217 Fed. 2d 70).

Malpractice—*Proof*

PROBLEM: A claimant said that a surgeon assured her that only a thin line would remain after a tattoo mark on her forearm was removed. An unsightly scar 2 in. long and 1 in. wide resulted. Was the surgeon liable in damages?

COURT'S ANSWER: *No.*

The New York Supreme Court, New York County, Trial Term, decided that a guaranty of a satisfactory result was not implied or expressed and that the patient had failed to prove that the operation and postoperative treatment did not conform to proper and approved practice (139 N.Y. Supp. 2d 549).

Compensation—*Epilepsy*

PROBLEM: An industrial worker was burned when he fell against a hot stove. The fall was apparently due in part to congenital epilepsy and partly to a respirator placed over his mouth to prevent inhalation of metal dust. Was he entitled to workmen's compensation?

COURT'S ANSWER: *Yes.*

So decided the Kentucky Court of Appeals though 2 judges dissented (278 S.W. 2d 721).

"Now don't you worry. I'll have you up and chasing her in no time."

MEDICAL NOTES ...*from* ABROAD

RUSSIA

Fibrin Dressings for Burns

The use of fibrin membranes as surgical dressing on burns prevents infection and excessive plasma loss from the wound, according to Dr. A. N. Goshkina of the Blood Transfusion Institute, Leningrad. Epithelization begins earlier when the fibrin film is used.

The fibrin film adheres tightly to the contours of the burned area without causing a foreign body reaction. Change of dressings is easier and repeated denuding of the healing surfaces is avoided.

Multiple perforations of the fibrin dressing to allow free drainage are recommended in patients with wounds that are already infected.

Vestnik khir. (Leningrad) 74:19-24, 1954.

GERMANY

Deficiency of Vitamin A

Keratosis of the vaginal epithelium in young girls may be a result of vitamin A deficiency, according to Dr. H. Rind of the University of Berlin.

Histologic examinations of smears from the vaginal epithelium in healthy girls before puberty show no evidence of keratinization, since estrogens are not secreted during this period. Increased keratosis, however, could be observed in girls of the same age group after acute or chronic diseases resulting in hypovitaminosis A.

Intravaginal instillations of vitamin A for several days promptly restores the normal cellular composition of the infantile vaginal epithelium.

Arch. Kinderh. (Stuttgart) 150:42-49, 1955.

Esophageal Exploration

The esophagus can be explored conveniently after a patient swallows a capsule containing barium.

Drs. M. Donner and W. Teschendorf of the X-ray Institute, Cologne, state that variable functional and topographic data are more easily obtained by this method than by the usual liquid barium swallows. The barium capsules are made in 3 sizes and indicate the exact location of stricture, the degree of narrowing, and the amount of spasm. The capsules are made of gelatin and dissolve quickly without causing any discomfort to the patient.

When given with a liquid swallow, the capsules help differentiate between diverticulum and spasm.

Fortschr. Geb. Röntgenstrahlen (Stuttgart) 82:202-208, 1955.

CARDIAC EDEMA
GLAUCOMA
EPILEPSY
now benefited by

Diamox*

Acetazolamide Lederle

DIAMOX has proved to be a very effective, safe, and convenient oral diuretic for use in controlling cardiac edema. In fact, it is now the most widely prescribed drug of its type. Recent evidence shows it is useful in two other important ways:

IN EPILEPSY

DIAMOX suppresses both the frequency and the severity of seizures, without apparent direct sedative action. DIAMOX appears to produce a relative acidosis in a manner similar to the ketogenic diet, and may also have a direct effect on nerve tissue. (1)

IN ACUTE GLAUCOMA

significant reduction in intraocular pressure is produced by oral administration of DIAMOX. This probably results from a decrease in the secretion of aqueous humor. DIAMOX also appears to enhance the action of commonly employed miotics. (2)

One product . . . three uses . . . a versatile therapeutic agent!

Available in 250 mg. tablets for oral use
and 500 mg. ampuls for intravenous use.

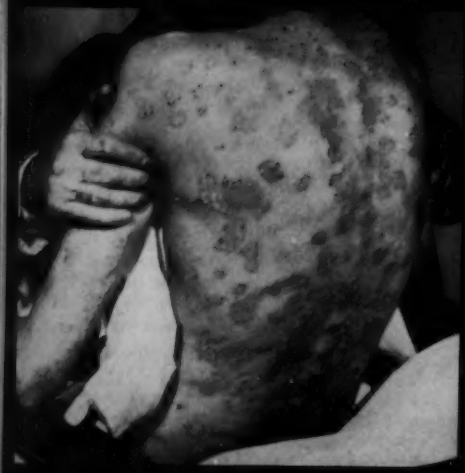
1. Merlis, S.: DIAMOX: A Carbonic Anhydrase Inhibitor—Its Use in Epilepsy. Neurology. 4:11, 863-866 November 1954.

2. Becker, B.: Decrease in Intraocular Pressure in Man by a Carbonic Anhydrase Inhibitor, DIAMOX. Am. J. Ophth. 37:1, 13-15 January 1954.

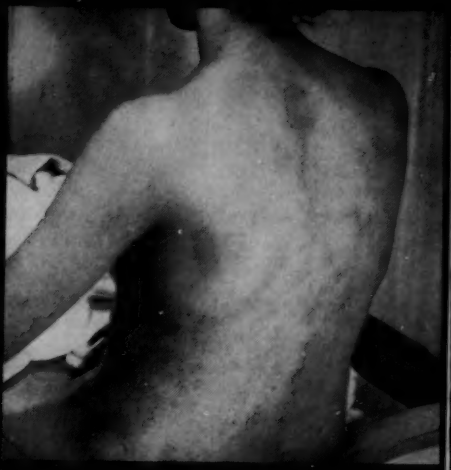
*REG. U.S. PAT. OFF.

Lederle LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY PEARL RIVER, NEW YORK

Psoriasis
of 5 years duration



Skin Cleared
after only 7 weeks



Belmont Laboratories, Philadelphia, Pa.

MAZON

dual therapy

Chronic psoriasis is stubborn and hard to clear up, leading to great patient discomfort. These clinical photographs illustrate the effectiveness of MAZON dual therapy in an actual case of five years' duration —and the skin was clear in a period of only seven weeks. MAZON dual therapy can be of great value to you in your treatment of not only acute and chronic psoriasis, but also exzema, alopecia, ringworm and other skin conditions not caused by or associated with systemic or metabolic disturbances.

MAZON Soap cleanses the affected area and prepares it for the action of MAZON Ointment.

MAZON is greaseless and requires no bandaging. Apply just enough to be rubbed in, leaving none on the skin.

Dispensed only in the original blue jar.

Atabrine Retention Test

Because malignant cells absorb more Atabrine than do normal tissues, tests of Atabrine excretion are apparently valuable in the diagnosis of cancerous tumors, report Drs. K. Bingold, C. Brilmayer, and A. Mack of the University of Munich.

Spectrophotometric studies were made of the urine of over 500 patients with malignant disease. The drug was injected intravenously in a single dose of 100 mg., and urine specimens were collected for examination two, three, four, five, eight, and twenty hours later. Urinary excretion curves fall rapidly so that practically none of the drug is found after four to five hours.

This method is most reliable in abdominal tumors and in neoplastic diseases of the brain, genitourinary tract, and hematopoietic and lymphatic tissues. In some cases, diagnosis is possible before the appearance of the definite clinical symptoms.

Atabrine content must be determined immediately because of rapid breakdown in an alkaline medium.

Krebsarzt (Vienna) 10:1-12, 1955.

Subtrochanteric Osteotomy

Good functional results are obtained in about two-thirds of patients undergoing subtrochanteric osteotomy by the Schanz technic, reports Dr. Günther Jödicke of the Orthopedic Hospital, Eisenberg.

(Continued on page 44)

Obedrin®

and the 60-10-70 Basic Diet

Correct medication is important in initiating control that leads to development of good eating habits, essential in maintaining normal weight.[1,2,3]

Obedrin contains:

- Methamphetamine for its anorexigenic and mood-lifting effects.
- Pentobarbital as a corrective for any excitation that might occur.
- Vitamins B_1 and B_2 plus niacin for diet supplementation.
- Ascorbic acid to aid in the mobilization of tissue fluids.

Obedrin contains no artificial bulk, so the hazards of impaction are avoided. The 60-10-70 Basic Diet provides for a balanced food intake, with sufficient protein and roughage.

Formula:

Semoxydrine HCl (Methamphetamine HCl) 5 mg.; Pentobarbital 20 mg.; Ascorbic acid 100 mg.; Thiamine HCl 0.5 mg.; Riboflavin 1 mg.; Niacin 5 mg.

1. Eisfeldor, H. W.: Am. Pract. & Dig. Treat., 5:778 (Oct.) 1954.

2. Sebrell, W. H., Jr.: J.A.M.A., 152:42 (May) 1953.

3. Sherman, R. J., M.D.: Medical Times, 82:107 (Feb.) 1954.

Write for 60-10-70 Diet pads, Weight Charts, and samples of Obedrin.

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2-a day
therapy for
the anemias

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BEVIDORAL® ..1 U.S.P. Oral Unit
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Folic Acid	2 mg.
Ascorbic Acid	150 mg.
Liver Fraction 2, N.F.	200 mg.
Thiamine Mononitrate	6 mg.
Riboflavin	6 mg.
Nicotinamide	30 mg.
Pyridoxine Hydrochloride	3 mg.
Pantothenic Acid	6 mg.

Abbott

In bottles of 100, 500 and 1,000 *Filmtabs.*

MAY WE SUGGEST

The operation was performed on 63 patients ranging from 10 to 40 years of age. The best results were obtained in patients between 10 and 30 years old.

Complications directly attributable to osteotomy occurred in 2 patients; 1 developed pseudarthrosis, the other Sudeck's atrophy of the operated extremity.

Ztschr. Orthop. (Stuttgart) 85:534-552, 1955.

Sequelae of Hemorrhage

Acute blood loss with resulting ischemia of the retina and optic nerve may cause such disturbances in vision as amblyopia and amaurosis, states Dr. Lothar Unger of the University of Rostock.

In most instances visual impairment after hemorrhage is observed in patients with previous ocular damage. The condition is not seen in young, previously healthy adults.

The first symptoms usually occur three to ten days after the blood loss; slight blurring in the beginning progresses rapidly and often leads to complete blindness. Ophthalmoscopic examination sometimes reveals postischemic edema of the retina and papilla. In extreme cases, the optic nerve is atrophied.

Hemorrhages that result in loss of vision are usually from the gastrointestinal tract or uterus. Acute traumatic hemorrhages seldom produce visual disturbances.

Klin. Monatsbl. Augenh. (Stuttgart) 126:41-50, 1955.

MAY WE SUGGEST:

When DIARRHEA proves recalcitrant to treatment, try

DONNAGEL®

(Donnatal with Kaolin and Pectin Compound)

Robins

For all ages...in all seasons...

Donnagel is building an extraordinary record of clinical success, even in stubborn cases, whether organic, functional or "emotional".

Its unique formula comprehensively embraces the gastrointestinal adsorbents and detoxicants kaolin and pectin, with the proven spasmolytic-sedative properties of 'Donnatal', and the superior antacid action of dihydroxy aluminum aminoacetate... in a highly palatable suspension.

Each 30 cc. of Donnagel contains:

Hyoscyamine Sulfate	0.1037	mg.
Atropine Sulfate	0.0194	mg.
Hyoscyamine Hydrobromide	0.0065	mg.
Phenobarbital (¼ gr.)	16.2	mg.
Kaolin (90 gr.)	6.0	Gm.
Pectin (2 gr.)	130.0	mg.
Dihydroxy aluminum aminoacetate (7½ gr.)	0.5	Gm.

A. H. ROBINS CO., INC. · RICHMOND 20, VIRGINIA

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SWITZERLAND

Intravenous Liver Extract

Deproteinized total liver extract administered intravenously may be valuable in the treatment of liver cirrhosis.

Dr. André Paraf observed 25 patients in advanced stages of progressing cirrhosis with ascites and edema. The extract was given undiluted between meals. To detect possible hypersensitivity, the first injection was given intramuscularly. Intravenous therapy was started only in the absence of any local or general reaction.

Good results were obtained in 7 patients and temporary improvement in 9. The remaining 9 patients did not respond to treatment. Liver function did not improve considerably, but ascites decreased sufficiently to permit omission of a salt-free diet. This is apparently attributable to the strong diuretic effect of the liver extract. No permanent cures could be obtained.

Rev. internat. Hépatol. (Paris) 4:399-403, 1954.

Protein Metabolism

Amino acid loading curves suggest that substances in the B complex vitamins enhance both the absorption and utilization of the amino acids.

Drs. C. Wild, C. Reymond, and A. Vannotti of the University of Lausanne find that vitamin B_{12} behaves differently than the other sub-

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THERAPEUTIC

Therapeutic formula

11 minerals, 9 vitamins—
for prompt nutritional recovery
following illness. All in one
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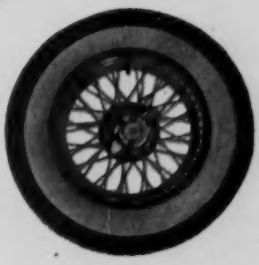

balanced formulae: for balanced nutrition ROERIG *Chicago 11, Illinois*

stances in this group. Its effect is mainly upon the assimilation of amino acids and increases this process in persons without vitamin deficiency. Patients with liver damage do not exhibit the mechanism.

Schweiz. med. Wchnschr. (Basel) 85:145-151, 1955.

AUSTRIA

Treatment of Concussion

When cerebral concussion is treated early, neurologic and psychic disturbances may be greatly reduced, reports Dr. H. Triska of the University of Vienna.

Because symptoms of brain concussion are mainly a result of impaired circulation and cerebral edema, vasodilators tend to improve the blood supply and reduce the swelling. Hydergin is given intramuscularly during the first four days and orally or sublingually as soon as the patient improves.

No significant side effects from the drug have been observed.

Klin. med. (Vienna) 10:61-68, 1955.

Therapy for Tracheal Collapse

Tracheal collapse after thyroidectomy can be prevented or treated by the use of metal supporting rings, reports Dr. Fritz Haas of the University of Innsbruck.

Softening of tracheal cartilages often occurs as a result of pressure by a hypertrophic thyroid gland. In the immediate postoperative period, collapse of the trachea with resulting respiratory difficulties may en-

sue. This can be prevented by fastening a semiannular wire frame to the perichondrium of the softened area after the completion of the thyroidectomy. The rings are made in 3 different sizes and can be matched in situ.

The metal rings were effective in 34 of 36 patients; 2 developed postoperative fistula.

Bruns' Beitr. klin. Chir. (Munich) 190:42-48, 1955.

FRANCE

Hormones for Rheumatic Fever

Administration of hormones to patients with rheumatic fever, particularly to those with severe cardiac involvement, is apparently the most effective method of treatment.

Dr. P. Mozziconacci and associates of Paris report excellent results in 17 of 22 patients with cardiac insufficiency as a result of an exacerbation of rheumatic fever.

Treatment with cortisone and ACTH reduced pulmonary congestion, lessened electrocardiographic deviations, and improved the patient's general condition.

In 131 patients with less severe cardiac, articular, and central nervous system involvement, temperatures decreased within four or five days after institution of therapy, cardiac murmurs were relieved, and joint pains disappeared. Choreiform movements were not affected.

The course of treatment lasts two to six weeks depending upon the severity of the disease. The dosages

are adjusted to the individual patient. ACTH is employed only for intravenous administration. The hormones remain therapeutically valuable in repeat courses.

Only 12 deaths occurred among 267 patients treated. In 8, death was due to rapidly progressing cardiac insufficiency; 4 had bacterial endocarditis unrelieved by antibiotics.

Arch. mal. cœur (Paris) 48:3-59, 1955.

Hereditary Factors in Ulcer

A familial history of peptic ulcer is prognostically unfavorable in patients with the disease, according to Dr. M. Leverat and associates of Lyon. Medical treatment is less effective, the incidence of chronicity greatly increased, and complications more frequent.

Familial incidence was noted in over 40% of 932 patients. Most had developed first symptoms at early ages. Among the patients were 26 sets of twins who had had peptic ulcer since adolescence.

In 3 children whose parents both had peptic ulcer, symptoms started at the age of 12 in 2 and at 17 in 1. Hematemesis, melena, and stenosis were frequent and 1 patient required gastrectomy at the age of 19.

Apparently the high familial incidence of peptic ulcer is due to constitutional factors rather than to direct heredity.

Arch. mal. app. digest. (Paris) 43:1001-1010, 1954.

"Hm-m-m . . . you too. I'm putting you on a straight vegetable and fruit diet."


To Relieve
Nasal Congestion
in HAY FEVER
Neo-Synephrine promptly constricts engorged capillaries thus reducing swelling and "bogginess" of the allergic nasal mucosa.
Neo-Synephrine's dependable vasoconstrictive effect also helps to stop local irritation and sneezing. No central stimulating effect, no drowsiness.
Used with undiminished effectiveness throughout an attack of allergic rhinitis, Neo-Synephrine may prevent complications — sinusitis, nasal polyps or even asthma, which may result from inadequate sinus drainage and chronically blocked nasal passages.
NEO-SYNEPHRINE®
hydrochloride
DOSAGE FORMS
Solutions: 0.25% — 0.25% (aromatic) — 0.5% — 1% —
Emulsion 0.25% — Jelly 0.5%
Nasal Spray 0.5% (plastic, unbreakable squeeze bottle)
Nasal Spray Pediatric 0.25% (new introduction)
Contains Zephiran® Cl 0.02% (1:5000), antibacterial wetting agent and preservative for greater efficiency.
Winthrop Stearns

Washington LETTER

Federal Health Programs Fostered by Sen. Hill

SEN. Lister Hill (D., Ala.), who has strong convictions that the federal government has certain responsibilities for the health of the public, is in a position to implement these convictions in this Congress and he is in the process of taking full advantage of it.

As chairman of the Labor and Welfare Committee, which is responsible for most health legislation, he has guided a number of minor bills through Congress and onto the statute books this year, and he is making progress on several major bills. If the latter aren't passed this session, the senator can take them up again next year without losing ground, because the same Congress will be returning in January.

"The doctor says his laryngitis should clear up in a day or so."

Of the important bills, the one Sen. Hill is most attached to calls for federal grants for constructing and equipping medical schools. A fund of $250 million would be distributed over a five-year period, at $50 million per year. The federal government would contribute two-thirds of the cost of new schools, and the same proportion for improvement and expansion of existing schools if the schools would agree to a 5% increase in enrollment.

When an increased enrollment is not involved, the government contribution for improvements would be limited to 50%. As of now, this bill is closer to enactment than any medical education bill has ever been. If it doesn't make the grade this year, it should next.

Sen. Hill is also steering through the Senate a bill, already approved by the House, calling for a national survey of mental health problems. This is almost certain to be enacted in the closing days. Closely associated with this, but not as sure of enactment, is a three-year, $90 million program of federal grants for building and equipping research facilities for certain specific "killing

(Continued on page 59)

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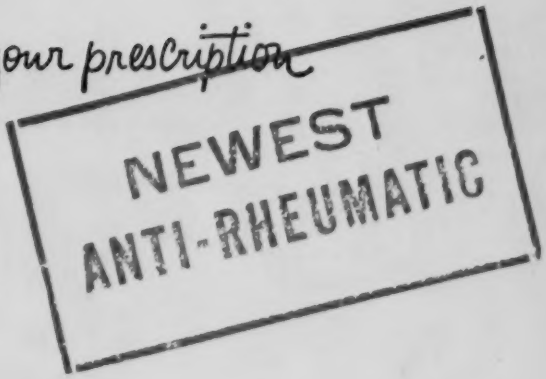

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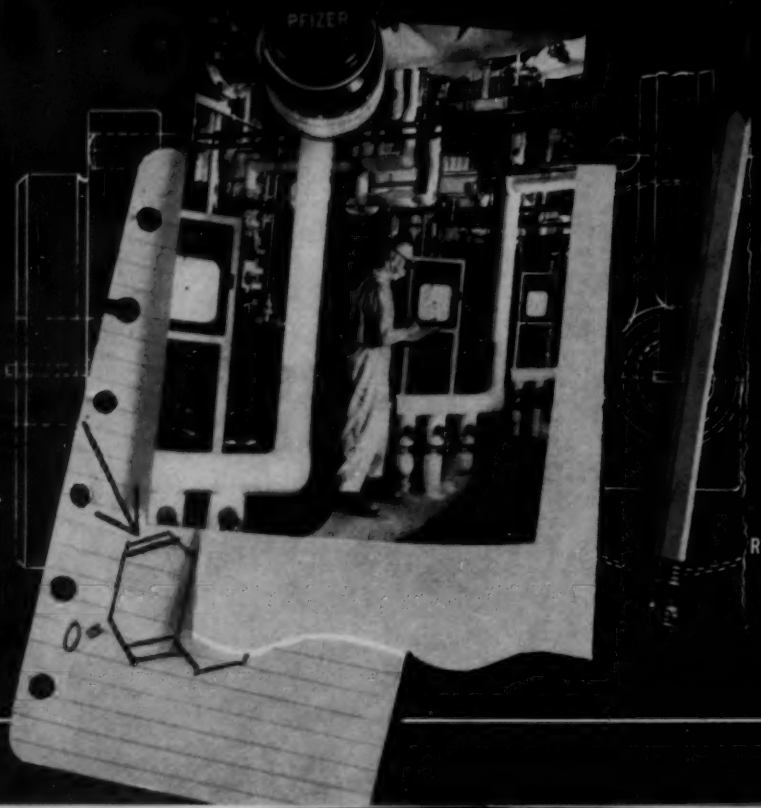

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virtually without edema caused by sodium and water retention—avoids excessive potassium loss—other side reactions usually minor and frequently transient

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anti-inflammatory anti-rheumatic anti-allergic

Supplied as scored 5 mg. oral tablets, shaped like the familiar Pfizer oval. Bottles of 20 and 100.

1. Bunim, J. J. et al. J.A.M.A. 157:311, 1955. 2. Boland, E. W.: California Med. 82:65, 1955. 3. Norred, S. R.: Am. Prof. Pharm. 21:241, 1955. 4. Waine, H.: Bull. Rheumat. Dis. 5:81, 1955. 5. Herzog, H. L. et al.: Science 121:176, 1955. 6. Spink, T. D.: GP, in press.

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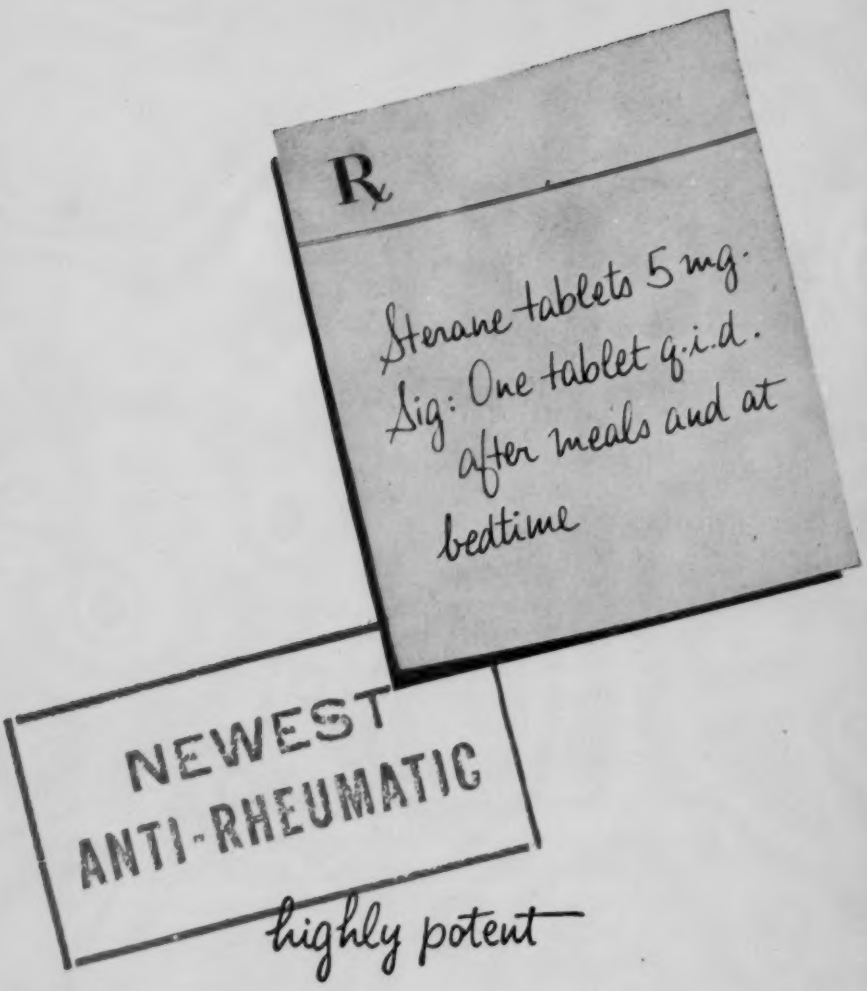
*Trademark for Pfizer's brand of prednisone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NEWEST
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highly potent

Sterane

and crippling diseases," such as cancer and mental sickness.

When the Salk vaccine issue arose, Sen. Hill plunged into that. He had several ideas for control and distribution of the vaccine and for payment of the costs. Early in July it was still uncertain whether any legislation at all would be passed, but if a bill does get through, the Alabama senator will be a prominent sponsor.

For those who "wanted Washington to do something about Salk vaccine," the hearings before the Hill committee were stimulating and a fine show. There was a smattering of scientific information and a great opportunity for debate over the long-standing issue of private versus public control. But, over the long weeks when the committee was tied up with these questions, its other work was put aside—work on aid to medical schools, the mental health survey, the research grants bill. Despite this delay, Sen. Hill and his committee have still been able to make good progress on these other bills.

The Hill influence isn't limited to promotion of new federal health programs. The senator is also chairman of a subcommittee that handles all appropriations for the Department of Health, Education, and Welfare, including the National Institutes of Health, the Public Health Service, and the Food and Drug Administration.

With Sen. Hill guiding and leading it, the subcommittee wrote into

the appropriations bill scores of increases over the figures voted by the House, and the Senate itself not only accepted all of the Hill increases, but added a few more. The result was encouraging news for those in and out of the federal government who think the government has not been showing enough leadership in health and medical research. There may be some downward adjustment in the Senate-House conference committee, but, thanks largely to Sen. Hill, there will be many more millions of dollars in the final bill.

Here are some specific Senate increases over the House figures:

- Vocational education was voted almost $3 million more, in addition to $2.5 million more approved for vocational rehabilitation grants to states.
- For communicable disease control, the Senate voted $850,000 more, along with $50,000 more for foreign quarantine service.
- For construction of hospitals and clinics on Indian reservations, $250,000 more was authorized.
- The appropriation for the NIH was increased from $89 million to $111,740,000. By activities, the increases were: cancer, mental health, and arthritis and metabolic diseases, approximately $4 million each; heart disease, $6.5 million; microbiology almost $1 million, and neurology and blindness almost $3 million.
- Although the House had voted

(Continued on page 64)

POTENT FORMULA

Two Pulvules 'Trinsicon' provide:

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor) . . . . . 300 mg.	These three ingredients are clinically equivalent to **1½ U.S.P. units** of APA potency.
Vitamin B_{12} with Intrinsic Factor Concentrate, U.S.P. . . . . 1 U.S.P. unit (oral)	
Vitamin B_{12} (Activity Equivalent) . . . . . 15 mcg.	
Ferrous Sulfate, Anhydrous . . . . . 600 mg.	Equal to over **1 Gm.** Ferrous Sulfate, U.S.P.
Ascorbic Acid . . . . . 150 mg.	
Folic Acid . . . . . 2 mg.	

Note: Special Liver-Stomach Concentrate, Lilly, supplies, in addition to intrinsic factor, natural compounds that add the broad nutritional support so important in all types of anemia.

CONVENIENT—Therapeutic quantities of all known factors are provided in only two pulvules daily—the ideal dosage in most anemias.

ECONOMICAL—The cost of combined therapy with 'Trinsicon' is less than half what it was in 1950.

about the usual amount—$96 million—for the Hill-Burton hospital construction program, neither Sen. Hill's subcommittee nor the Senate itself was satisfied. The total for this program—of which Sen. Hill was a founder—was increased to $125 million, with the entire increase going for the "regular" HB grants to hospitals. The Senate accepted the House figure of $21 million for grants to diagnostic-treatment centers, rehabilitation facilities, chronic disease hospitals, and nursing homes.

• For all PHS work, the Senate approved a net 18% increase over the House total, from $297 million to $352 million.

Sen. Hill has made it plain that he believes in starting new federal medical programs, and in not letting the old programs die on the vine for lack of money. And he will be back next year, holding the same key positions on legislation and appropriations.

DRUG TESTING REGULATIONS

One outgrowth of the Salk vaccine problem is the prospect of a penetrating investigation into the mechanics for checking not only on biologicals but also on all drug preparations.

Half a dozen federal departments and agencies are involved in keeping an eye on the pharmaceutical manufacturers and the drug industry. Many of the laws on which regulations are based are twenty-five or more years old. The law

under which Salk vaccine was licensed, then prohibited, then released is almost fifty years old, and was enacted when there was no conceivable way of knowing what the future problems would be.

Rep. Percy Priest (D., Tenn.), chairman of the House committee most important in health legislation, wants such a study made, but he doesn't want it tied too closely to the confusing and emotional Salk vaccine questions. While some other chairmen were scheduling hearings as fast as they could and entering into open competition for top name witnesses to testify on the vaccine, Mr. Priest said there was "no urgency" about his plan for a long and careful look at the whole problem of the relationship of the federal government to the drug industry. But Mr. Priest will get into this next year.

Washington Notes

¶ A complicated issue arising late in the session concerned rights of veterans to medical care through the Veterans Administration. Under present law, a "service connection" can be terminated at any time on evidence that it is not valid. The new proposal is to put a ten-year limit on this investigation period—in other words, a "service-connected" status for injury or sickness would become permanent after ten years. It would be particularly advantageous to veterans in building up their service-connected pensions, which increase with age on the as-

sumption that the disability also increases.

¶ Action by the Senate saved the National Science Foundation several million dollars for research and training, funds the House had cut out of the bill.

¶ Both Houses have agreed that the VA should have $16 million to speed up a program for modernizing hospitals. It has been demonstrated that older hospitals require costly maintenance services.

¶ A committee composed of federal officials has urged that the government set up a broad program of research in air pollution and technical assistance to states in this work. While reaffirming the principle that the primary responsibility belongs to the states, the committee said the federal government had to do more if progress was to be made. At this writing it appears that Congress may be able to pass legislation carrying out the committee's suggestions before adjournment.

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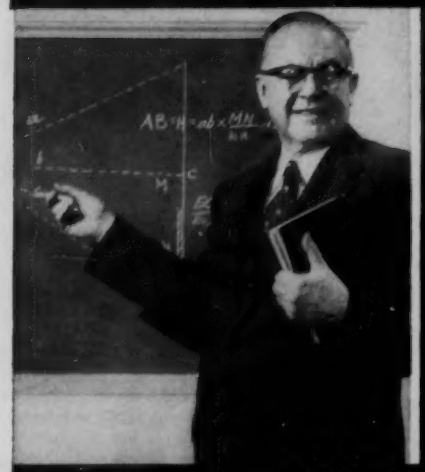

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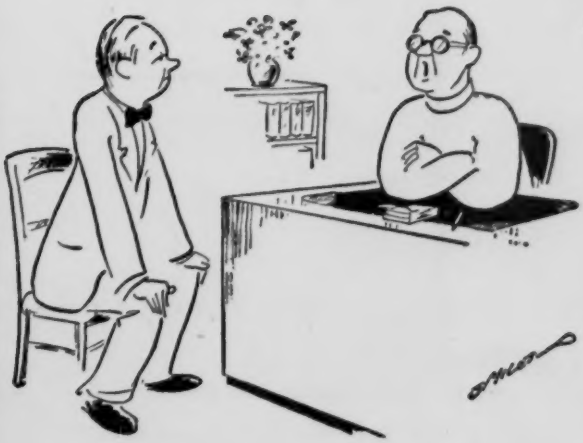
REFERENCE: 1. Kirwin, T. J., Lowsley, O. S., and Menning, J., Am. J. Surg. **62**:330-335, December 1943.



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Frankford, W.Va.

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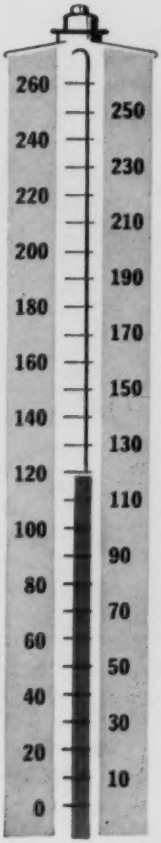

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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

THE EDITOR'S PAGE

by WALTER C. ALVAREZ, *Editor-in-Chief*

Brief Pains in or about the Rectum

Quite a few middle-aged men complain of attacks of severe transitory pain in the rectal region. Sometimes this pain comes in the middle of the night, or it follows sexual intercourse, or perhaps more often, a bit of sex play not followed by intercourse. Usually the pain lets up in five minutes. The question is, what is the cause? What a number of physicians who have suffered from this type of pain have told me is that it seemed to them to be due to a cramp in the muscle of the prostate gland, a cramp much like that which comes in a muscle of the leg. I think this hunch is probably correct. It would perhaps explain why women are not bothered by such a pain. They have vague, nervous rectal pains but these are less severe and more widespread and lasting.

There is a possibility that the pain might be caused by thromboses which are so common in the veins around the prostate gland. Commonly, one sees the calcified scars of such thromboses in roentgenograms of the pelvis, and it may be that when the clot forms it causes a momentary pain.

The fact that the vague rectal pains of women are not associated with defecation or with the passage of gas, or with constipation or diarrhea, or with eating; and the fact that in their case sigmoidoscopic examination never shows anything wrong, indicate that these pains are not due to any macroscopic local disease. Furthermore, one sometimes encounters patients with these pains who have had the pelvis explored surgically without any lesion having been found. Significant is the fact that in most cases of such pain the woman is neurotic and some of her relatives a bit psychotic.

Should a Nontoxic Goiter Be Removed?

Probably most physicians were trained in college to leave a small nontoxic goiter untouched. When it was not very big, the woman was told to come back if the mass should start growing or if it should become so extensive in size as to start pressing on her trachea.

We have long known of the danger that occasionally cancer will start growing in a goiter, and we have known that once the cancer is obvious, the chances of the patient's survival are not good. In the past, we have felt reassured by statements in the literature to the effect that hidden cancer of the thyroid gland is rare.

Today we cannot feel so sure, since Drs. J. D. Mortensen, W. A. Bennett, and Lewis B. Woolner of the Mayo Clinic have reported that of 1,000 consecutive autopsies in which the thyroid gland was removed and carefully sectioned, cancer was found in 5%. Apparently, in years past, examinations of the thyroid gland were not always sufficiently complete to establish the presence or absence of cancer.

How Sodium Poor Is a Sodium-Poor Diet?

A while ago, an authority on sodium-poor diets remarked that even in a metabolic unit where all the food is carefully scrutinized and weighed, every so often several hundred milliequivalents of sodium will get in. Where they come from no one can say.

Recently Dr. William H. Hulet decided to measure the sodium, potassium, and chloride content of a supposedly 200-mg. sodium diet (*Am. J. M. Sc.* 229:85-88, 1955). The doctor reported his surprise on finding that in a group of 13 diets which according to routine calculations should have contained 200 mg. of sodium, the actual amount ranged from 304 to 812 mg. with an average of 513 mg.

The Kempner rice and fruit diet was the only one that contained less than 200 mg., but, even with that diet, food which was supposed to contain only 26 mg. actually contained 169 mg. This, however, agrees with a statement once made by Kempner that his rice and fruit diet allows a daily sodium intake of up to 150 mg.

Special Article

Anatomic Factors in Biliary Tract Surgery

MANUEL E. LICHTENSTEIN, M.D.*
Northwestern University, Chicago

Prepared for Modern Medicine

SURGERY of the biliary passages has attained a high state of refinement. Excellent results are obtained in most patients with biliary tract disease. However, not all patients subjected to surgery of the biliary passages have enjoyed the benefits so earnestly desired by patient and surgeon alike. The basic reasons for failure may be classified into 4 groups. Anatomic factors play an important role in each.

1] *Incomplete diagnosis*—The presence of stones in the gallbladder is not positive evidence that gallbladder disease is responsible for the patient's complaint. A gallbladder with stones may be incidental to other causes of distress in the epigastrium and the right upper quadrant of the abdomen. Neurologic, hematologic, arthritic, cardiac, pulmonary, and other abdominal conditions may be responsible for the patient's complaint. Removal of the gallbladder without recognizing other causes of symptoms is not likely to give relief. In the absence of stones in the gallbladder, symptoms simulating those of gallbladder disease but due to spasm in the stomach, duodenum, sphincter of Oddi, or colon are not always relieved by cholecystectomy.

2] *Incomplete surgery*—Incomplete removal of a diseased gallbladder or retention of a large segment of the cystic duct may be responsible for recurrence of symptoms. Failure to explore a common duct containing stones which obstruct or failure to establish adequate patency of the ampulla due to an unrecognized carcinoma of the pancreas or duodenum is responsible for an unsatisfactory effect.

Omission of a drain in the subhepatic space, with accumulation of bile requiring additional surgery, prolongs the disability.

Persistence of symptoms or the development of new and more serious symptoms from disease in the biliary passages after surgery to relieve the patient constitutes a surgical failure.

3] *Accidents*—Injuries to large vessels, resulting in hemorrhage or liver necrosis, and injuries to the hepatic or common ducts, causing leakage of bile or obstructive jaun-

*Associate Professor of Surgery, Northwestern University Medical School; Professor of Surgery, Cook County Graduate School of Medicine, Chicago.

dice, may be succeeded by death or prolonged disability.

4] *Complications*—Respiratory, vascular, neurologic, and other complications incidental to anesthesia or inadequate preoperative and postoperative management prevent complete recovery. The postoperative incisional hernia may be more troublesome than the gallbladder disease for which surgery was done.

In order that the number of dissatisfied and disabled patients be reduced and the mortality rate lowered, an effort must be made to analyze each group in detail and to avoid omissions and errors. To this end the patient is systematically examined after a detailed history of the complaint has been obtained. Other disabilities are investigated, too, and such laboratory studies are made as will aid in arriving at a more nearly complete diagnosis. The preoperative preparation of the patient must be adequate and the operative procedure should relieve and, if possible, cure the patient. Success of the operative procedure will rest on how well surgery is done. The avoidance of accidents and complications must be kept in mind constantly. A knowledge of the anatomy involved is most helpful. Anatomic hazards are present from the moment the initial incision is made until the last closure suture is placed in the wound.

ABDOMINAL WALL INCISION

The abdominal wall incision should be long enough to afford a wide exposure of the field. This will permit [1] exploration of the neighboring abdominal viscera; [2] visualization of the anatomy concerned in the operation; and [3] manipulation necessary for removal of the gallbladder, probing of the ducts when necessary, and control of bleeding due to accident, disease, or design. Injuries to the ducts and blood vessels frequently are a result of inadequate or faulty exposure, but many patients fail to recover completely because of inadequate exploration.

In spite of what is regarded as a complete preoperative examination, some intraabdominal pathologic conditions which produce symptoms or which will interfere with recovery are not detected before surgery. Roentgen studies, too, are not always revealing. However, when the abdomen is opened there is an opportunity to make a visual or palpatory exploration to detect any significant pathologic conditions which can be corrected immediately or which indicate the need for postoperative medical care or further surgery (Fig. 1). Thus the patient is not dismissed with an unrecognized existing or impending cause for complaint.

Whether the surgeon prefers an oblique, transverse, or longitudinal incision is not as important as the size of the incision and the exposure it affords (Fig. 2). With satisfactory illumination of the field and gentle, careful retraction by an assistant who is aware of his responsibility not to injure the tissues, most of the accidents that actually occur in this field can be prevented.

A common anatomic hazard in gallbladder surgery is the postoperative incisional hernia. This may be

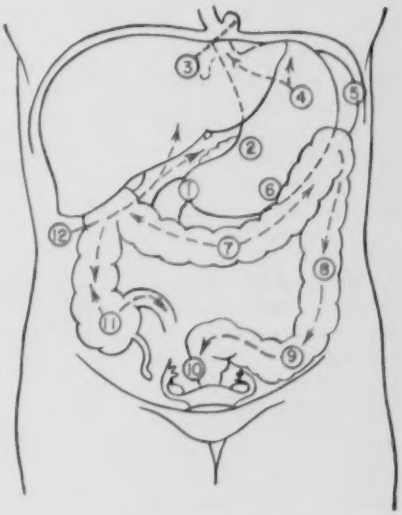
Figure 1

Exploration Before Gallbladder Surgery

Abdominal exploration before elective cholecystectomy may reveal other causes for symptoms

The sites commonly involved are:

1. The anterior and posterior walls of the pylorus and first portion of the duodenum. Ulcers and tumors should be sought.
2. The lesser curvature of the stomach. Lesions include penetrating ulcers or tumors.
3. The esophageal hiatus of the diaphragm. Hernia is frequently asymptomatic but in obese patients is a source of symptoms.
4. The fundus of the stomach. This silent area can accommodate a large lesion before obstruction occurs.
5. The spleen. Hemolytic jaundice is frequently related. Bile pigment stones may occupy the gallbladder and common duct but jaundice will persist in spite of cholecystectomy and common duct intubation.



Neoplastic inflammatory or ulcerative lesions may be found in

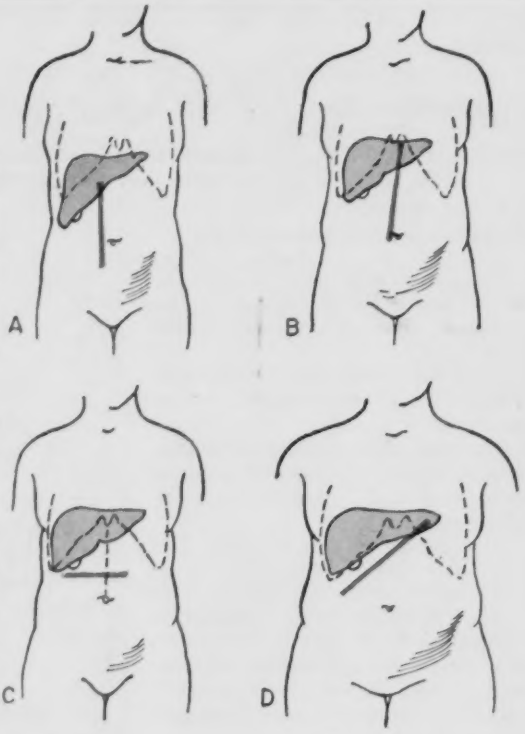
6. The greater curvature of the stomach
7. Hepatic and splenic flexures of the transverse colon
8. The descending colon and left kidney
9. The sigmoid and mesosigmoid
10. The rectosigmoid and rectum and uterus and adnexae
11. The cecum, appendix, ileum, jejunum, ascending colon, and right kidney
12. The pancreas, duodenum, and liver.

a result of faulty healing from one or several causes or to malocclusion of the layers of the abdominal wall. While the causes of faulty healing are well known and can be guarded against by proper nutrition, prevention of infection, and avoidance of distracting forces on the suture line, the anatomic factor of complete and accurate closure of the posterior sheath of the rectus muscle with its transversus muscle, transversalis fascia, and attached peritoneum needs constant reemphasis.

Figure 2

The Abdominal Wall Incision

The configuration of the torso is not the same in all patients. The selection of an incision adapted to the configuration is more satisfactory than one that does not give adequate exposure or permit all necessary manipulations with the least risk of accident.



A

A long, narrow torso is usually associated with a long, narrow liver. The gallbladder is low in the abdomen. A low right rectus incision will expose the essential anatomy without the need for dislocating the liver out of the abdomen. Accidents and injuries occur because vessels and ducts are torn when the inferior surface of the liver is rotated to the external wound.

B

In the patient with an average torso, the right paramedian incision provides satisfactory exposure for exploration and manipulations essential for gallbladder removal, common duct exploration, or exposure of the ampulla of Vater.

C

In the average torso, a short transverse incision is restrictive in scope and exploration is limited.

D

In the short, squat, and obese patient, a long oblique incision gives ample exposure directly over the site of the essential anatomy.

Failure to suture this important layer because of negligence or inadequate abdominal wall relaxation is the most common reason for postoperative hernia. Attention to the details of closure is well worth whatever additional time is required to restore the integrity of the abdominal wall. Suture materials should hold the tissues in approximation until healing is well established. Nonabsorbable sutures for fascial closures are more certain to do so.

A plane of anesthesia sufficient to relax the abdominal musculature is needed, and closure of the incised wound should not be attempted until this is established. At this stage, some anesthetists use muscle-relaxing agents to facilitate the closure. This is useful, but the hazard of decreased respiratory excursion and anoxia warrants constant vigilance to make certain that the patient can breathe well in the immediate postoperative period. A clear airway, with adequate oxygenation of the blood by artificial pulmonary ventilation, is a requirement until the patient regains control of respiration and is out of danger.

BLOOD VESSELS

Accidents involving blood vessels and ducts may be immediately fatal or result in prolonged disability before recovery takes place. In some patients, recurrent disabling episodes ultimately result in such changes in the liver that recovery is impossible. Thus one small error may change a prospective good result into a failure, and a patient who might have enjoyed good health is committed to a long period of disability.

The prospect of one or more hazardous procedures to correct an injury that may shorten the life of the patient should discourage the surgeon from working blindly in an obscure field. Any avoidable disability is too high a price to pay for a small inadequate incision and inadequate visualization of the field. Ligation of the hepatic artery distal to the origin of the gastroduodenal artery may result in such extensive necrosis that the degree of liver damage is incompatible with life. This should call attention to the need for a satisfactory exposure of the neck and cystic duct of the gallbladder in order that large pulsating vessels may be seen, palpated, and remain undisturbed.

An anatomic hazard at this point is a distended gallbladder. It obscures the ducts and vessels, interferes with exploration of the regional anatomy, and adds to the danger of its removal. The distended gallbladder should be packed off, aspirated of fluid content, and emptied of stones. Large stones lodged in the neck or cystic duct should be removed by an incision directly over the stone or manipulated into the body of the gallbladder by gentle compression. The normal contractions of the gallbladder are not always sufficient in power to empty stones or other formed contents into the common duct, but the application of a forceps or forceful compression by a metal retractor or with the hand on a tense or distended gallbladder may do so readily. Thus emptying of the gallbladder aids in visualization of the field and prevents the passage of stones into the common duct.

To facilitate further exposure of the ducts and vessels, the neck of the gallbladder is elevated and the cholecystoduodenal ligament is opened by blunt severance from the gallbladder. The peritoneal edges of this opening are separated with care until sufficient exposure of the extraperitoneal space in which the ducts and vessels lie is obtained.

Additional mobility of the neck of the gallbladder may be obtained by incising the serosa and subserosa on the lateral aspect of this portion of the gallbladder and elevating it from its bed in the liver. The common, hepatic, and cystic ducts may then be inspected and the cystic artery or arteries isolated.

Any bleeding from torn small vessels which obscures the field is controlled by the application of a warm moist pad. Within a few minutes a dry field is obtained. This is a requirement if accidents are to be avoided.

Cystic arteries vary in number from one to four. The position of the cystic arteries is not fixed, and each should be ligated when it is seen to enter the gallbladder. The closer to the gallbladder the vessels are ligated, the lesser the likelihood that the hepatic vessels will be ligated or injured. Here the admonition "take a good look" is more in order than clamping in the dark with a prayer and a hope that nothing but the cystic artery was caught by the clamp.

The gallbladder is held to the liver not only by its serosal covering, which is continuous with Glisson's capsule, but also by a cystic artery. This is demonstrated by the ease with which the gallbladder is removed after severance of the cystic artery. During surgery, traction on the neck of the gallbladder causes the cystic artery to become taut, and unless care is taken the vessel may be torn or mistaken for a fibrous band and cut with resulting hemorrhage. This accident is avoided by ligation of the cystic artery soon after its exposure with severance close to the gallbladder. This permits greater mobility of the neck and cystic duct with a lesser risk of hemorrhage.

The sites of origin of the cystic artery or arteries are any branch of the celiac axis of the aorta, the superior mesenteric artery, or the aorta itself. While most commonly the cystic artery comes from the right hepatic artery, its origin at a large vessel some distance from the gallbladder may subject it to injury during retraction of the viscera adjacent to the gallbladder. This further emphasizes the need for care in the initial phase of cholecystectomy when the viscera are exposed and the field is opened to view. Medial and inferior displacement of the duodenum with retraction by a hand or instrument may compress a torn vessel arising from the superior mesenteric artery and prevent bleeding. After removal of the retractor, the operative field may fill with blood and prolong the procedure, or bleeding may occur in the early postoperative period after closure of the abdominal wall and result in shock.

There are variations in the relative positions of the cystic duct and the cystic artery. While it has been emphasized that most arteries to the gallbladder are posterior or medial to the cystic duct, experience shows that this is not always the case, for the vessel or vessels may be lateral to the duct also.

There is particular danger when a vessel is cut or torn and retracted out of the field. The accumulation of blood obscures the ducts and

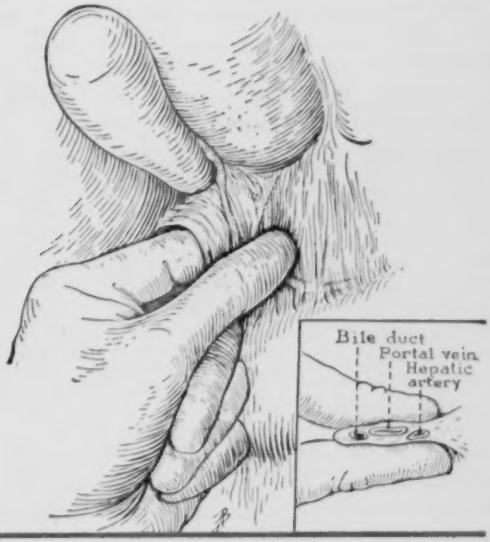
SPECIAL ARTICLE

Figure 3

Control of Bleeding

Occlusion of vessels to the liver and gallbladder

Cross-section view of structure *(insert)* held by the index finger and thumb



larger vessels. The application of a forceps in this field in an effort to control bleeding makes injury to these structures possible. Usually, the application of a forceps to control bleeding is intuitive or is done reflexly. While this may be advantageous in some locations, it is decidedly disadvantageous here.

The insertion of the left index finger into the foramen of Winslow enables compression of the hepatic artery with the left thumb (Fig. 3). This controls the bleeding and allows aspiration of the blood and irrigation of the field with isotonic salt solution. Removal of this fluid by suction clears the field. The surgeon can then see the extent of injury and secure the bleeding point.

THE DUCTS

Length of the cystic duct varies. Extremely short ducts are less than 1 cm. in length and conducive to injury of the hepatic and common ducts. The slightest traction on a gallbladder with a short duct favors "tenting" of the other ducts, so that the application of a clamp occludes more than the cystic duct.

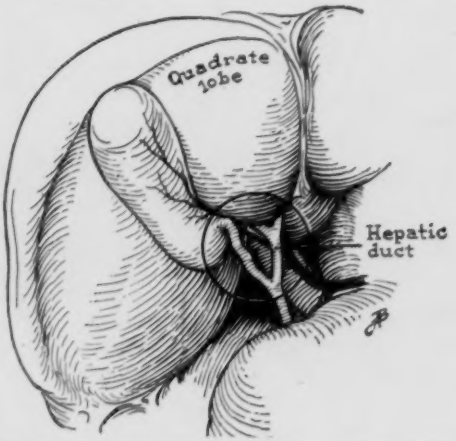
Other cystic ducts are as long as the gallbladder itself. Frequently, a long cystic duct and the hepatic duct lie side by side for 1 cm. or more before uniting to form a common duct. It is less hazardous for the patient to have the contiguous portion of the cystic duct remain, for complete excision of a cystic duct attached to the hepatic duct may be more injurious to the long hepatic duct, duodenum, or pancreas.

Clamping the cystic duct should be avoided in almost all instances. Exposure of the duct can be more readily done with careful blunt dis-

Figure 4

The Quadrate Lobe

The separate hepatic ducts of the common hepatic duct leave the liver at the base of the quadrate lobe. Immediate exposure of this lobe by traction on the round ligament to the left and emptied gallbladder to the right is an aid to visualization of the danger zone.



section, using a fine-tipped Mixter forceps or any of its modifications and applying a ligature directly to the cystic duct at right angles to its axis in full view of the common and hepatic ducts.

The cystic duct usually has the narrowest caliber of all the extrahepatic ducts, and its surface is corrugated or irregular due to small, leaflike projections into its lumen, extending in a spiral throughout short ducts. These are the valves of Heister, an embryologic formation usually not found in the distal end of long cystic ducts. These anatomic characteristics of the cystic duct are useful in establishing its identity on sight.

Because of variations in the mode of union of the right and left hepatic ducts with the cystic duct to form the common duct, the occasional union of the cystic with the right hepatic duct, and the rare entrance of the right hepatic duct into the gallbladder, careful inspection is warranted before any duct is ligated and cut.

The location of the hepatic duct is constant. It lies at the bottom of the quadrate lobe of the liver. This lobe is bounded by the gallbladder or gallbladder fossa on the right, the round ligament on the left, the anterior margin of the liver superiorly, and the hilus where the larger vessels enter and the hepatic ducts leave the liver. If this anatomic fact were more generally known, serious injuries to the hepatic duct could be avoided. The duct lies behind a layer of peritoneum which must be opened to expose the duct. The thickness of this peritoneal layer varies with the degree of chronic peritonitis associated with the biliary tract disease.

Immediate exposure of the quadrate lobe by traction on the round ligament medially and cephalad and displacement of the body of the emptied gallbladder laterally help to visualize the danger zone

in biliary tract operation (Fig. 4).

Pathologic factors determine the need for exploration of the common duct. As a safeguard in exploration, aspiration of bile is an assurance that the portal vein has not been mistaken for the duct.

Mobilization of the duodenum by incision of the parietal peritoneum on its lateral margin facilitates manipulation necessary to [1] explore the duct, [2] expose the ampulla of Vater, or [3] effect repair of injured ducts.

Bile leaking from the wound after operation may be due to injury of an accessory duct rather than improper ligation of the cystic duct. This can occur in the simplest case when the liver is dislocated out of the abdomen by rotation. Short accessory ducts are torn off. Injury to an aberrant duct without knowledge that it has been torn or evulsed is a hazard in every case. Some of these ducts are very narrow in caliber and may be injured during cholecystectomy. Subsequently, a large amount of bile may accumulate in one or several of the subphrenic or subhepatic spaces (Fig. 5).

Some surgeons of wide experience and good judgment do not use drains as routine practice after cholecystectomy and state that they have no cause to regret this omission. However, many others are convinced from their observations that it is better to insert a drain and risk a useless application with a good result than to omit the drain and risk a subphrenic accumulation of bile, blood, or peritoneal fluid.

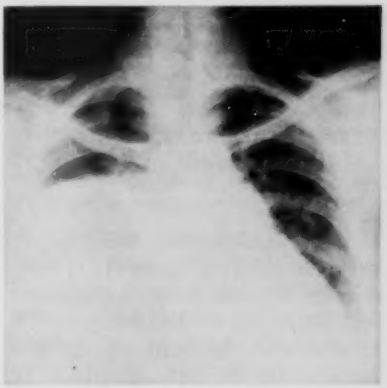


Fig. 5. Right subphrenic space. Elevation of right diaphragm due to accumulation of bile after cholecystectomy without drain in the right subhepatic space. Complete recovery followed right subcostal incision with suction and insertion of a drain.

A drain should not be a substitute for careful surgery. Hemostasis, closure of openings in ducts, and suture of leaking bile channels lying in the gallbladder bed of the liver prevent the accumulation of blood and bile in the subhepatic space. A hernia practically never results when the drain leaves through a stab wound on the right side below the costal margin.

Consequence of Pleural Effusion

WILLIAM H. ROPER, M.D.
New York State Department of Health, Albany

JAMES J. WARING, M.D.
University of Colorado, Denver

*Acute serofibrinous pleurisy with effusion in a young adult is frequently tuberculous in origin.**

---

with pleurisy re-
, pleur-
ated

pleura will cause a serious disease state. Bed rest and chemotherapy are recommended to reduce the risk of subsequent relapse.

All of 141 young male adults who had primary serofibrinous pleural effusions while in military service reacted positively to intracutaneous tuberculin. None had
therapy for the initial illness.
erculous etiology of the
was proved bac-
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elapse. Of
fluids

Patterns of Protein Excretion

S. EDWARD KING, M.D.
New York City

*Patients with protein in the urine must be carefully studied to distinguish between inconstant orthostatic proteinuria and continuous proteinuria caused by renal disease.**

EXCRETION of protein by the kidneys involves many complex physiologic alterations, many of unknown nature. Proteinuria is usually a result of increased glomerular protein filtration, which is frequently accompanied by actual or relative tubular protein reabsorptive impairment.

To distinguish between orthostatic and continuous proteinuria, the conditioned urine protein excretion test is employed. The test requires collection of 2 consecutive resting night urine specimens and 3 day specimens after prescribed and activity. In these specimens patterns of protein distribution sible:

tern: protein present

protein pres-

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idneys. Ann. Int. Med. 42:296-323, 1955.

organic renal disease and is invariably observed in individuals with active chronic glomerulonephritis, congenital renal defects, or advanced chronic pyelonephritis.

Orthostatic proteinuria represents a pathophysiologic disorder which may be caused by a number of organic or functional renal disorders. The term, orthostatic, is often used inaccurately to include instances of fleeting, accidental proteinuria discovered by routine examination of normal people.

The more severe types of orthostatic proteinuria occur in association with organic renal disease, including congenital renal defects, latent quiescent nephritis, early pyelonephritis, and diffuse vascular disease. The course of these renal diseases is progressive and the proteinuria cannot be considered benign.

With hypertension, diabetes, amyloidosis, and collagen disease, orthostatic proteinuria is an incidental finding but may be the sole presenting abnormality. Physical findings in most patients with orthostatic proteinuria are not unusual.

Previous glomerulonephritis, coexisting congenital renal abnormalities, pyelonephritis, or urologic disease may be discovered in such instances only after careful clinical and laboratory study. Postrenal

produced by the penicillin fraction
of the injected preparation. Particular
the procaine fraction to be respon-
noted, penicillin in all forms should be

reaction of penicillin on some membranes, especially
mucous or weeping surfaces, is particularly likely to produce sensi-
tivity. Instillation of the drug into sinuses and spraying of surface
infections are typical examples.

Immediate subcutaneous administration of epinephrine usually relieves symptoms. Oxygen and shock therapy are also of value. Intravenous plasma may be required for severe reactions.

Anaphylactoid reaction to penicillin. South. M. J. 47:1085-1088, 1954.

[illegible] the Abdominal Aorta

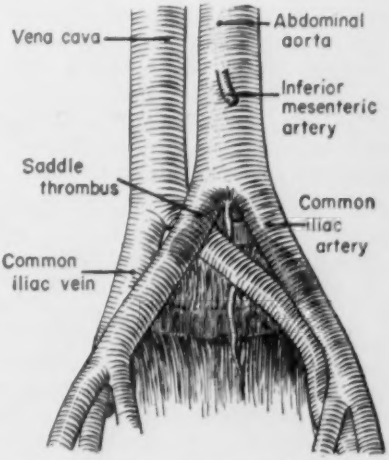
[illegible] COVEY, M.D.
[illegible] of Nebraska, Lincoln

*[illegible] systolic murmur [illegible] processes of the [illegible] vertebrae is commonly [illegible] with thrombosis of both iliac [illegible] or with thrombosis of the [illegible] terminal aorta.**

INSIDIOUS, chronic aortoiliac thrombosis is much discussed, but the physical sign of a musical systolic lumbar murmur apparently has gone unnoticed. Thrombosis of the terminal aorta occurs in relatively young persons as compared to generalized arteriosclerosis. The condition is common in males 40 to 60 years of age.

An important etiologic factor may be an apparent tendency of tiny healed or healing mural thromboses to be the sites of repeated accretions.

Intermittent claudication is the cardinal symptom of slow arterial occlusion in the lower extremities. When the terminal aorta and iliac arteries are involved, an aching sensation related in quality to the feeling of fatigue is experienced. The symptom is not the intermittent limp due to pain in the calf or foot that usually results from functional hypoxia in the muscles. The sensation is typically located in the region of the hips and low back and is referred to as a hip-type of claudication. Loss of penile erection is a second cardinal symptom.



Saddle thrombus at aortic bifurcation

A constant physical finding is diminution or lack of pulsations in the arteries in the lower extremities, that is, the femoral and iliac arteries and the abdominal aorta. Although atrophy of soft tissues of the lower extremities is common, gangrene rarely occurs.

A rather loud systolic murmur is heard over the aorta, above the umbilicus, and over one or both common iliac arteries. Such a murmur is not too rare with some other conditions, especially with aneurysms of the abdominal aorta. However, this murmur is heard over the

*Thrombosis of the abdominal aorta. Nebraska M. J. 40:205-210, 1955.

spinous processes of the lumbar vertebrae in a louder and more musical form than when detected over the anterior aspect of the abdomen.

Medical management using Priscoline or similar drugs has been of equivocal value. Accurate evaluation of drug therapy is difficult. Surgical treatment is varied and includes lumbar sympathectomy, alone or combined with ligation and removal of the thrombosed segments of arteries, and thromboendartectomy. Perhaps the most logical procedure is excision of the involved artery and replacement by an arterial graft.

If collateral circulation is adequate, the outlook for a relatively active life for a considerable time is probably good, even with no therapy.

Unless cephalad propagation of the clot causes occlusion of important arteries to vital structures, such as the kidneys, the patient's life is not in great danger.

Anemia with Systemic Disease

M. C. VERLOOP, M.D., UNIVERSITY OF UTRECHT, THE NETHERLANDS, reports that anemia associated with such diseases as lymphatic or myelogenous leukemia, erythremia, erythroleukemia, myelosclerosis, myeloid metaplasia, Hodgkin's disease, and malignant reticulosis often has a hemolytic component. Anemia of such diseases may be caused by increased destruction of erythrocytes or by formation of red blood cells with intrinsically shortened survival times in the bone marrow.

The most accurate methods of demonstrating hemolysis in systemic disease are quantitative determination of daily fecal excretion of urobilinogen and determination of the survival time of transfused erythrocytes. Since more than one-half of patients have normal bilirubin contents, serum bilirubin determinations are often of no [illegible] a normal or slightly raised reticulocyte count does not [illegible] effective usually when auto- [illegible] such antibodies. [illegible] anemia

Hodgkin's Disease: Symptoms, Prognosis

I. DAVIDSOHN, M.D
Chicago

*Even when Hodgkin's disease is generalized, amelioration of symptoms and prolongation of life are possible.**

THE most frequent manifestations of Hodgkin's disease are enlarged lymph nodes, weight loss, anorexia, weakness, and fever. Remissions and exacerbations are common.

If pyrexia is of the Pel-Ebstein form, long periods of high fever and sweats alternate with normal temperatures. Fever may accompany deep lymph node enlargement.

A latent period with slight node enlargement and pruritus may be succeeded by cervical node enlargement, splenomegaly, and progression to a generalized stage with fever, night sweats, anemia, and cachexia. The course may be acute and fulminating or protracted.

Unilateral cervical node enlargement is most frequent; lymph nodes are more often involved on the same side in two regions than on both sides in one region. Cervical, axillary, or mediastinal nodes are involved more often than retroperitoneal, inguinal, or epitrochlear nodes.

Usually nodes harden as their [illegible] increases and are discrete and [illegible] or matted together. The cut surface is semitranslucent gray with opaque yellow-gray streaks and pale yellow dots of necrosis. In recently involved nodes, the cut surface bulges; in older nodes, fibrosis causes retraction.

The spleen is involved in up to 75% of advanced cases. The liver is affected less frequently. Disease may be primary in the spleen, liver, stomach, ileum, or duodenum but is more often generalized.

The neoplasm may be confined to the mediastinum or abdominal cavity. Massive mediastinal disease is more common in the very young. Many patients have lung lesions. Spread to vertebrae, skull, thorax, and pelvis is late in chronic cases.

A normocytic normochromic anemia progressing to a hypochromic microcytic or even refractory anemia may occur. Leukocytosis with lymphopenia is more frequent than leukopenia. About 20% of patients have eosinophilia. Monocytosis is common.

Bone marrow aspiration is rarely diagnostic. Nocturia is common during exacerbations. With generalized disease, the basal metabolic rate is elevated.

Diagnosis can be made only by excision biopsy. Lower cervical and axillary nodes are less apt to show inflammatory changes than upper cervical or inguinal nodes. A group

*[illegible]. J. Michigan M. Soc. 54:445-451, 1955.

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SSLER, M.D.
rsity, Boston

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pulses are absent in
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bounding, claudication presumably does not exist. In the occasional patient with claudication and palpable pedal pulsations, the occlusion will frequently be found proximal to the femoral artery. The condition is often complicated by the coexistence of other diseases, such as neuritis or arthritis, that also cause pain in the extremities.

The oscillometer is overrated as an aid in evaluating the degree of arterial insufficiency. Oscillometric readings do not accurately reflect the effectiveness of the collateral blood supply and the main value lies in confirming the lack of palpable pulses and in demonstrating a difference in pulsatile flow between the extremities when peripheral pulses are not palpable.

Roentgenographic demonstration of vessel calcification cannot be correlated with occlusion and therefore is not helpful in diagnosis. Arteriographic examination is also of limited application and is of no use for prognosis. However, with limited conditions, arteriograms may be helpful as diagnostic aids in reconstructive surgical procedures on obstructed arteries.

Therapy must include attention to all factors that decrease blood supply, such as congestive failure, anemia, diabetes, and fresh arterial occlusion. Peripheral blood flow

claudication. Circulation 11:806-818, 1955.

# of Allergic Reactions

SULLIVAN, M.D.
ersity, St. Louis

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VE EVIDENCE

ma antibody formation usu-
velops artificially but occurs
ally in a few persons. Natural-
veloping antibody is generally
gin, whereas artificially develop-
antibody is more likely to be

precipitin. Treatment with cortisone eventually results in cessation of plasma antibody production. However, if the host is continuously exposed to the antigen, antibody formation will resume shortly after cessation of therapy.

In the normal animal, introduction of antigen results in perivascular neutrophilic infiltration, which persists for about forty-eight hours. In the antibody-sensitized animal or patient, reintroduction of the antigen produces explosive, dynamic vascular reactions within fifteen minutes. The components of these reactions disappear within one hour. Corticotropin and cortisone do not interfere with antigen-antibody union in the circulation or with the experimental or clinical reactions that result from this union.

A variety of substances, including histamine, are capable of producing shock that is indistinguishable from anaphylactic shock in the normal animal. Pretreatment with cortisone is ineffective in preventing general or local histamine-induced immediate reactions.

Additional reactions occur with plasma antibody and antigen long after the initial fifteen minutes required for complete union of antigen and plasma antibody. The Arthus reaction is representative of these additional reactions and can

lassification of allergic reactions. Ann. Int. Med. 42:786-809, 1955.

Symptomatology of Hiatus Hernia

GEORGE V. HALL, M.R.C.P., AND NOEL C. NEWTON, F.R.C.S.
Sydney, Australia

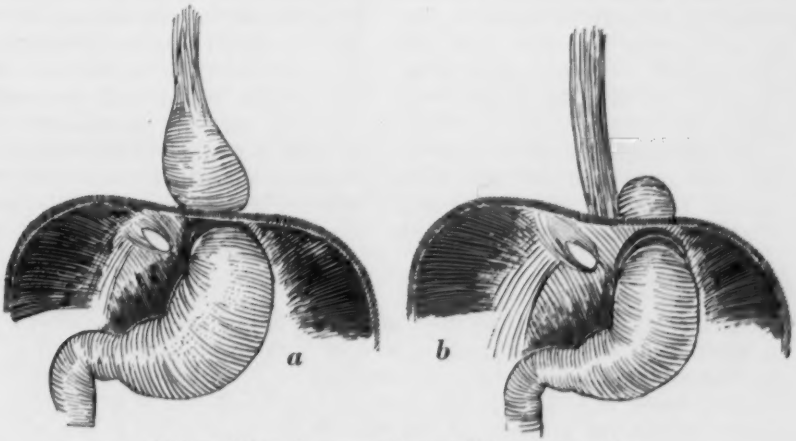
*Diagnosis of hiatus hernia is frequently missed in patients believed to be cardiac or neurotic invalids.**

THE manifestations of herniation through the esophageal opening in the diaphragm are often vague. The disorder should be suspected in persons with abdominal symptoms or refractory anemia and also in the "pseudo-cardiacs," "nervous dyspeptics," and "air-swallowers."

The most common symptom is epigastric or substernal pain or both. Discomfort is also felt in the upper abdominal quadrants and in the left and right chest. Gaseous eructations accompany and sometimes relieve the pain.

With esophagitis, a substernal burning sensation appears and may radiate to the back, neck, jaw, ear, palate, shoulders, or arms. Patients may have an awareness of food passing down the gullet, which sometimes causes actual pain. Difficulty in swallowing may ultimately ensue.

The pain of hiatus hernia is induced by exertion and occasionally awakens the patient during the night. Sitting up or drinking water or alkalis provides temporary relief. A common symptom is a feeling of hot fluid or acid rising into the



Sliding [*a*] and paraesophageal [*b*] hiatus hernias

*A review of 70 cases of hiatal hernia, with particular reference to symptomatology. M. J. Australia 1:449-454, 1955.

Nutrition in Surgical Patients

JOHN H. CRANDON, M.D.
Boston

*Since an adequate circulating blood mass is of paramount importance for proper tissue nourishment in surgical patients, hydration and blood replacement are as vital as is replenishment of carbohydrates, proteins, fats, vitamins, and minerals.**

HE amount of blood replacement cessary for patients with acute ma from fractures, burns, or hing injuries is roughly pro- ional to the degree of trauma, though hemorrhage is not ob- In addition, subacute or ically ill patients coming to without previous gross g may have deficits of whole as high as 3 liters. Because nal loss of blood volume oduce profound shock, defi- st be replaced before sur-

ction in venous pressure is sensitive indicator of re- lood volume than red blood nt or hemoglobin or he- determinations. Withdraw- o 20 cc. of blood from ital vein with a No. 19 cides roughly with the culating blood volume. me is reduced, blood freely after the first s been withdrawn.

Whole blood, red cell suspensions, and albumin, separately or in combination, are used to meet specific needs. Dextran in amounts to 1 liter may be used in an adult with normal red cell blood mass to repair operative blood losses.

Since sodium retention is common in the postoperative patient, isotonic saline is given only in amounts equal to external losses, as from fistulas, vomiting, perspiration, or gastric suction. The remainder of fluid replacement consists of 5% dextrose and water.

When the patient has dehydration and electrolyte depletion preoperatively, isotonic saline is given initially. Blood chemistries should not be corrected too rapidly, since over 60 cc. of saline per kilogram of body weight during the first eighteen-hour period is not well tolerated in conditions other than burns. If more electrolytes than water have been lost, signs of cellular overhydration, such as disorientation, restlessness, and muscular twitching, accompany lowered serum electrolyte levels. In such instances, 2 to 5% saline solutions may be valuable.

Potassium deficiencies due to excessive vomiting, gastric suction, diarrhea, fistulous drainage, or exudation, with compensatory intracellular migration of sodium, result

gical patients. J.A.M.A. 158:264-268, 1955.

nitrogen catabolism in the immediate postoperative period is difficult to reverse entirely even with massive administration of protein hydrolysates. Since wounds heal even with this physiologic negative nitrogen balance, proteins need not be given during this period, which generally lasts two to five days. However, a high-protein, high-caloric intake is essential for convalescence.

Diagnosis of vitamin deficiencies is best made from investigation of the patient's diet habits. Vitamin C is essential for wound healing, and

than a few days. vitamin K should be given preoperatively in such instances. Therapeutically induced prothrombin deficiencies in patients who develop hemorrhage are combated with fresh whole blood transfusions and administration of vitamin K_1 emulsions in doses of 50 mg. every four hours.

Surgical interest in calcium and phosphorus metabolism is generally limited to renal stone formation in patients immobilized for such conditions as fracture and to tetany resulting from excision of the parathyroids. Calcium should be restricted in immobilized patients, and, conversely, large amounts of calcium and vitamin D are administered to hypoparathyroid patients.

¶ METASTASIS OF SIGMOID CANCER to the anus may occur through the intestinal lumen with little or no involvement of the proximal lymph nodes. Claiborne W. Fitchett, M.D., of the University of Virginia, Norfolk, believes that implantation probably results from a break in the epithelium. Abdominoperineal sigmoidoproctectomy was apparently an effective procedure in a patient who had an adenocarcinoma of the colon with drop metastasis to an anal crypt.

Surgery 37:991-995, 1955.

posure Treatment of Burns

CAPT. JOHN L. ENYART AND CAPT. DONALD W. MILLER, M.C., U.S.N.
U. S. Naval Hospital, Newport, R.I.

*In mass burn casualties, exposure treatment is especially effective and helps to control and eliminate infection, reduces skin grafting, and shortens the recovery period.**

SHOCK from burns is treated with blood and electrolyte solutions. During the first twenty-four hours, the amount of isotonic sodium chloride solution administered should be equal to the body weight in kilograms multiplied by the per cent of body area burned; 50% is the factor used when burns cover more than half the body area. An equal volume of plasma expander is given intravenously during the same period; about one-third of the plasma expander fraction is blood, and the remainder is dextran or serum albumin.

During the second twenty-four hours, half the volume of isotonic sodium chloride solution, blood, dextran, and serum albumin is given. If tolerated, a half-normal solution of saline or sodium bicarbonate, sodium citrate, and saline may be given orally. At the end of the first forty-eight hours, sodium chloride administration is discontinued, and hydration is maintained with aqueous glucose solutions until diuresis is established. Intravenous therapy may cause potassium diuresis and necessitates replacement.

Body surface areas are calculated by the rule of 9, that is, head and neck, 9%; each upper extremity, 9%; each leg, 18%; front of the trunk, 18%; back of trunk, 18%; and genitals and perineum, 1%. If over 25% of the body surface is burned, a Foley catheter is inserted and intravenous therapy is given fast enough to maintain urinary output at about 50 cc. per hour.

Burned patients should be stripped of clothing or bandages and completely exposed on a bed with fresh sheets. Sheets or blankets draped over frames made of metal rods may be used to eliminate cooling drafts. Judicious employment of warming lamps may accelerate the drying-out process.

Debridement and cleansing of burn surfaces should be deferred for twelve hours or until the patient's condition is stable. If necessary, burn surfaces are cleansed with hexachlorophene (pHisohex) and irrigated with isotonic sodium chloride solution. Tissues must be handled gently. Blisters are left intact, and only loose skin edges are removed. Meperidine (Demerol), morphine, or alphaprodine (Nisentil) is sufficient analgesia.

*Treatment of burns resulting from disaster. J.A.M.A. 158:95-100, 1955.

A protective coagulum usually forms on the burn surfaces in forty-eight to seventy-two hours. Adequate coagulum forms on circumferential burns if the patient is turned every six hours. Stryker frames aid turning.

Coagulum gradually peels from superficial split-thickness burns on about the tenth to fourteenth day, leaving a well-healed surface. Deeper split-thickness burns in which only islands of epithelium remain around hair follicles and sebaceous glands require about three weeks to heal. The coagulum may become thick but finally peels to leave a very thin epithelized surface. Spontaneously healing deep split-thickness burns may be distinguished from third-degree areas by a coagulum which becomes thick and finally nodular within six to twelve days.

The chief advantages of exposure treatment are control and elimination of infection. Burn surfaces should be inspected carefully and infected areas debrided daily, as infection prolongs healing. Infection frequently occurs over joint areas, where the coagulum tends to crack. When the temperature is elevated, concealed areas of infection should be suspected, and if none is apparent, blisters are opened and the coagulum is incised for inspection. Infection also may convert deep split-thickness burn areas which should heal spontaneously into third-degree areas that require grafting.

Eschars form over third-degree burns and gradually separate, leaving moist wounds over which daily dressings can be applied. Once separation begins, early removal of eschar facilitates grafting.

Penicillin and streptomycin may be administered prophylactically the first week. Further antibiotic therapy should be based on cultural sensitivities if infection develops. Tetracycline and chloramphenicol appear to be the most effective agents.

With face burns, the larynx and respiratory passages are usually burned also. Tracheotomy must be done at the first sign of respiratory distress. However, in most instances, aerosol therapy with a mixture of 2 cc. of Alevaire, 0.2 cc. of 1:100 Isuprel, and 100,000 units of penicillin relieves respiratory irritation.

With extensive burns, gastric dilatation is common during the first forty-eight hours. Levin-tube suction is frequently necessary and is used routinely in burns of over 50% of the body surface. If suction is required for a prolonged period, tube feeding and suction may be alternated every two hours.

A diet high in protein, calories, and vitamins is recommended, especially during the skin-grafting period. Grafting of third-degree burn areas should not be done until the tenth to fourteenth day. Earlier excision may remove viable epithelial islands under the eschar. In addition, early extensive grafting in badly burned patients may jeopardize survival. Lay-on grafting, using strips or sheets of skin over joint surfaces and small postage-stamp grafts over other areas, gives good results and conserves donor skin.

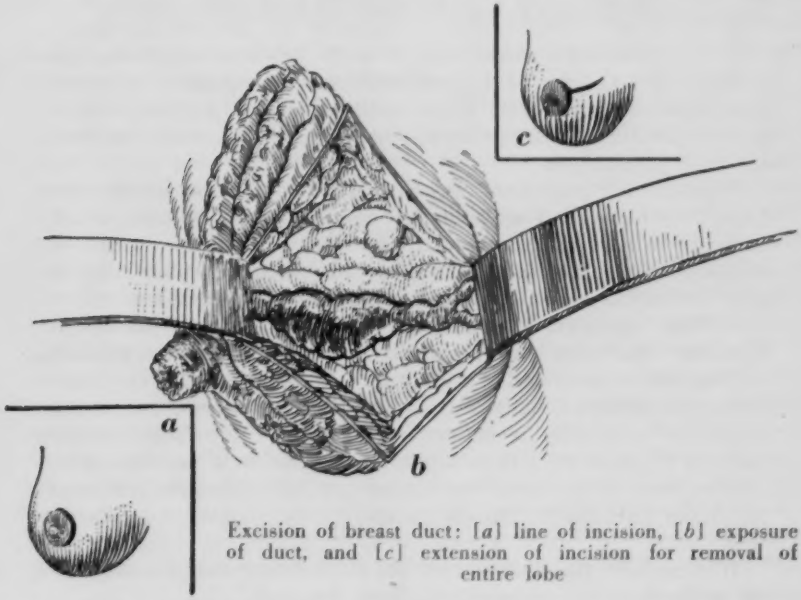
Main Duct Papilloma of the Breast

W. H. SNYDER, JR., M.D., AND LAWRENCE CHAFFIN, M.D.
Hospital of the Good Samaritan and the University of Southern California, Los Angeles

*Polyps of the main lactiferous ducts of the breast may be satisfactorily treated by local excision when multiple lesions and cancer can be excluded.**

NIPPLE discharge with or without a superficial mass located in the nipple area is suggestive of ductal tumor. Diagnosis can be made from the production of nipple discharge by multiple point palpation along the periphery of the areola. Exact localization is necessary for excision of the ductal papilloma with the least amount of operative injury.

Repeated examinations of the breast are made preoperatively to exclude the possibility of multiple lesions. A mass is not always present, but nipple discharge in response to pressure at a specific point on the areola usually identifies the duct containing the papilloma.



Excision of breast duct: [*a*] line of incision, [*b*] exposure of duct, and [*c*] extension of incision for removal of entire lobe

*Main duct papilloma of the breast. Arch. Surg. 70:680-685, 1955.

At surgery, a circular incision is made at the periphery of the areola (Fig. *a*). The skin, subcutaneous tissue, and breast capsule are incised and reflected to the nipple and laterally over the breast tissue as far as possible (Fig *b*).

The duct with the dilated area, which is slightly discolored, is opened longitudinally to reveal the papilloma. A wedge-shaped section of breast tissue including the duct is removed. If an entire lobe of the breast must be excised, the incision is enlarged radially from the areola (Fig. *c*). The incision is closed over a Penrose drain.

If several separated main duct systems yield discharge on pressure, local excision should not be attempted. Frozen section is done, but a final decision often must await paraffin studies. If cancer is found, the customary radical mastectomy is performed. The patient with main duct papilloma is not only rid of the polyp by this technic but also benefits from the microscopic assay of a wide section of breast tissue.

After local excision of a main duct papilloma, the patient should be observed at regular intervals. This observation is made despite the fact that the occurrence of carcinoma after surgical excision of ductal papilloma is rarely observed.

The Little Finger for Mitral Commissurotomy

J. BRADLEY AUST, M.D., IVAN D. BARONOFSKY, M.D., AND C. WALTON LILLEHEI, M.D., UNIVERSITY OF MINNESOTA, MINNEAPOLIS, report that the little finger, with or without a glove, may be used to perform mitral commissurotomy in patients with very small auricular appendages.

When the left auricular appendage is too small to admit the forefinger, morbidity and mortality of mitral commissurotomy are increased. In such instances, when the heart is not explored or the diseased valve is approached through the left atrial wall or through a left pulmonary vein, technical difficulties are formidable.

At first consideration, the little finger may seem inadequate. However, this finger may be rigidly fixed in a semiflexed position, and the whole hand and arm may then be utilized to lift the finger. Also, the shorter length of the fifth finger as compared to the forefinger is actually an advantage, since the little finger may be inserted through the left auricular appendage in a position appreciably closer to the mitral valve than can be reached by the longer forefinger introduced through the more distant superior pulmonary vein.

If necessary, the diameter of the little finger may be decreased by removal of the rubber glove from this digit.

Use of the little finger for mitral commissurotomy. J. Thoracic Surg. 29:608-610, 1955.

Emergency Resections of the Colon

ROBERT O. GREGG, M.D.
State University of New York, Syracuse

*Many primary lesions of the colon can be safely resected at the time of emergency exploration if the life or future health of the patient is threatened.**

COLOSTOMY is often regarded as the most reliable method of management for obstructing and perforating lesions of the colon. However, primary colonic resection and anastomosis are safe in selected patients, because of the availability of potent antibiotic agents and better understanding of the effects of intestinal obstruction. Selection of patients for primary resection must be individualized, and the decision for either colostomy or resection is made at the time the lesion is examined surgically.

As a rule, colostomy should be done for [1] traumatic perforation with gross fecal soiling; [2] late perforation with abscess formation, fecal fistulas, or gross fecal soiling; and [3] late obstruction of the left colon.

Resection and primary anastomosis are done [1] for early perforation of an inflammatory mass of uncertain origin; [2] for early obstruction in which the proximal bowel returns to almost normal after trocar aspiration; [3] when the entire obstructed segment can be readily removed, allowing anastomosis of loops of normal intestine; and [4] when obstruction has progressed to the point of imminent or actual cecal perforation, unless the patient is nearly moribund, in which case subtotal colectomy is usually necessary.

The patient's general condition must be good, and the exploration should reveal a suitable local condition. The bowel to be sutured should be of relatively normal size and free of edema with a good blood supply. The proximal bowel should be free of large fecal masses.

OBSTRUCTION

Patients with simple acute colonic obstruction are usually in good physical condition unless extensive disease, such as metastatic carcinoma, exists. Preoperative study consists of the usual diagnostic procedures, and, if rectal examination is negative, sigmoidoscopic study is performed. If the latter is also negative, a barium enema is done.

Complete exploration is made whenever possible. If distant metastases are found, resection and anastomosis or some type of internal decompression is preferable to a colostomy. When the lesion is in the lower sigmoid or rectum and is

*The place of emergency resection in the management of obstructing and perforating lesions of the colon. Surgery 37:754-761, 1955.

nonresectable, a low colostomy is performed. If the lesion is resectable, then the decision lies between primary resection and anastomosis and decompression of the proximal colon and resection at a later date. When the lesion is in the lower sigmoid and subsequent anterior resection seems possible, a transverse colostomy is performed at the initial exploration and anterior resection is done at a later date. When the lesion is too low for subsequent anastomosis, a cecostomy is performed initially and then a combined abdominoperineal resection.

PERFORATION

Patients with colonic perforation are usually more ill than persons with simple obstruction because of varying degrees of peritonitis. Antibiotics should be administered before exploration, and blood should be available for transfusions. If only a small leak is found and no masses are associated at exploration, surgery is not necessary and the lesion may be treated with antibiotics. If gross fecal soiling and thick pus are seen in the peritoneal cavity, a diverting colostomy is performed and the peritoneal cavity is drained.

When the inflammatory mass is well localized and can be mobilized, resection and anastomosis may be performed. After removal of the specimen, the adequacy of the resection is determined by opening the bowel at the site of the lesion. If necessary, further resection is done. Proximal colostomy is necessary only if the safety of the anastomotic line is in doubt or if the anastomosis has been performed in the region of the peritoneal resection or lower.

Surgery for Segmental Colitis

JAMES H. MANNING, M.D., RICHARD WARREN, M.D., AND ABDUS SATTAR ADI, M.D., VETERANS ADMINISTRATION AND MASSACHUSETTS GENERAL HOSPITALS, BOSTON, believe that ileosigmoidostomy or ileocolostomy with resection of the diseased colon is advisable in most instances of segmental, or right-sided, colitis. An anastomotic procedure with segmental colectomy should be performed initially. If the disease fails to subside, ileostomy may be done. Ileosigmoidostomy does not cause diarrhea unless the disease recurs.

Segmental colitis occupies a midposition between ulcerative colitis and regional ileitis in location, symptomatology, and complications. Prolonged medical management is generally unsatisfactory.

Anastomotic operations performed with or without concomitant resection of involved bowel in 34 patients with segmental colitis were successful in rendering 19 of the subjects asymptomatic. In general, the results obtained when resection was done were superior to those obtained when no colon was removed.

Segmental colitis. New England J. Med. 252:850-853, 1955.

Management of Liver Injuries

GORDON F. MADDING, M.D.
San Mateo, Calif.

*The establishment of adequate external drainage is of prime importance in the surgical management of liver wounds.**

BECAUSE of a rather superficial location, the liver is extremely vulnerable to blunt trauma and penetrations of the lower chest and upper abdomen. Seriousness of an injury is related to error in diagnosis, associated lesions, and improper therapy.

While the mortality rate for uncomplicated liver wounds is only about 7%, prognosis becomes poorer as the number of other organs affected increases. Multiple visceral involvement is the most important single factor in prognosis.

Diagnosis is not difficult when trauma is associated with penetrating injuries. However, in the absence of penetrating wounds, no symptoms are pathognomonic. Signs are chiefly those of hemorrhage and shock, with associated peritoneal and diaphragmatic irritation. Severe abdominal pain is the most common symptom, and tenderness and distention with some rigidity frequently occur. Rectal tenderness may indicate that blood and irritating bile have gravitated to the pelvic peritoneum.

When diagnosis of a ruptured solid viscus within the abdominal cavity is made, the chances are equal that the liver or the spleen or both are injured. Needle aspiration, peritoneoscopic study, and detailed roentgenographic examination with contrast media are occasionally helpful in diagnosis but cannot be used routinely. Laparotomy should be done when liver injury is suspected.

Operative intervention is imperative with all liver injuries; mortality rates are high with nonoperative therapy. The preoperative management is concerned mainly with shock. For shock from bleeding, blood is administered by the drip method before, during, and after operation, unless the condition is serious enough to warrant a transfusion under pressure. Nasogastric tubes should be used also. Postoperatively, administration of electrolytes and antibiotics, relief of respiratory embarrassment, and control of pain are important.

Although bleeding is usually not active during operation, careful debridement of the area with perfect hemostasis and sufficient drainage through separate 1½-in. stab wounds are essential. Several large Penrose drains are placed in the subhepatic, the subphrenic, and, frequently, the intrahepatic spaces. Drains are removed gradually, usu-

*Injuries of the liver. Arch. Surg. 7:748-756, 1955.

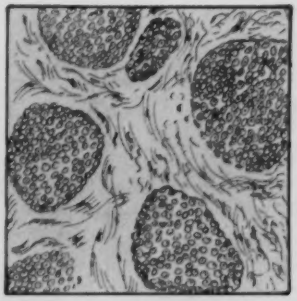
ally beginning on the fourth or fifth postoperative day. Complete removal is deferred until drainage has virtually ceased, preferably by the tenth or twelfth postoperative day.

Hilar injuries are uncommon because of the natural protection afforded the porta hepatis by the liver. The liver should be sutured with mattress stitches placed deep in the hepatic substance.

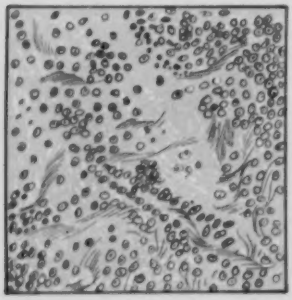
The use of such agents as oxidized cellulose to control venous ooze is unjustified.

Prognosis in Breast Cancer

MAURICE M. BLACK, M.D., STANLEY R. OPLER, M.D., AND FRANCIS D. SPEER, M.D., NEW YORK MEDICAL COLLEGE, NEW YORK CITY, report a definite correlation between postoperative survival and the microscopic structure of primary breast carcinoma and regional lymph nodes. Prognosis is excellent for patients with highly differentiated primary tumors, lymphoid infiltrate in the primary tumor, and sinus histiocytic reactions of regional lymph nodes. The rate of five-year survivals is very low for patients lacking these features.



Nuclear appearance of carcinoma in a patient who died eighteen years postoperatively



Nuclear appearance of carcinoma in a patient who died eighteen months after operation

The relationship between structure and prognosis exists regardless of the patient's age, presence or lack of axillary metastases, or preoperative duration of the disease.

The lethal potentialities of breast cancer are not predictable solely on the basis of anaplasia. Other factors such as host resistance seem to be involved. Resistance is visualized as histiocytic reaction in the regional nodes and lymphoid infiltrate in the primary tumor.

A large number of patients with carcinoma of the breast live for long periods by virtue of completely unknown physiologic mechanisms. Prognostication will become more accurate if all possible evidence of tumor-retarding influences is investigated.

Survival in breast cancer cases in relation to the structure of the primary tumor and regional lymph nodes. Surg., Gynec. & Obst. 100:543-551, 1955.

Metabolic Disease in Surgical Patients

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*Any derangement of the body's metabolic defense mechanisms, greatly increases surgical morbidity and should be treated vigorously preoperatively.**

THE survival of the surgically traumatized patient is directly related not only to the extent of the procedure but to the efficiency of varied metabolic adjustments initiated in times of bodily stress. When the patient is unable to produce or utilize the usual adaptive changes, the risk of operation increases greatly. The physician therefore must have a thorough knowledge of the normal body's reaction to injury and must be able to recognize and treat preoperatively any disease which would impair the patient's chances of recovery. When the patient's metabolic disease is of sufficient gravity, even emergency surgery must be deferred until adequate replacement therapy can be started.

Generally, the body reacts in a consistent manner to a number of stresses. The shock phase, which occurs immediately after injury, is denoted by hypotension, tachycardia, hemoconcentration, hypoglycemia, and loss of muscle tone. Shortly after the initial phase, a countershock response begins with release of both epinephrine and norepinephrine from the adrenal medulla. These hormones act immediately to overcome some of the cardiovascular reactions to shock, and epinephrine evokes the adrenocorticotropic hormone from the anterior pituitary.

With the subsequent release of adrenal cortical hormones, the body begins to mobilize secondary defenses. The mineralocorticoids act to retain sodium and chloride, to excrete potassium, and to maintain the blood pressure. The glucocorticoids promote the conversion of protein to sugar and liver glycogen and release gamma globulins by lysis of eosinophils and lymphocytes. The blood volume also rises, blood glucose and chloride are elevated, and slight alkalosis may occur.

The thyroid may also be activated by either hypothalamic discharges or secretion of pituitary thyrotropic hormone in times of stress. Thyroxine is an efficient countershock agent in the acute phase because of its ability to speed oxidation, release sugar from glycogen, and promote gluconeogenesis, but the catabolic effects of the hormone must be balanced by adrenal cortical hor-

*The impact of emergency surgery on patients with pre-existing disease. S. Clin. North America 35:319-333, 1955.

mones to preserve metabolic economy. Normal adrenal cortical activity eventually inhibits the increased thyroxine utilization prompted by stress.

In order to react successfully to the trauma of surgery, the body must be able to produce and utilize in proper sequence many hormonal agents. The hormones elaborated must find normal stores of liver and muscle glycogen and adequate blood volume and electrolytes to offset the effects of shock. Furthermore, the specific target organ for each agent must be intact. The study of the patient, therefore, must be directed at uncovering any defect which might leave him metabolically unprepared. A deficiency in one endocrine organ may abolish a major defense phase, and preceding phases may be so uninhibited as to be pathologic. Likewise, depletion of any of the body's basic fuels or electrolytes may make response to endocrine stimulation inadequate.

Losses of body fluids create some of the commonest metabolic imbalances which increase surgical risk. Lack of water, vomiting, diarrhea, fistula, tube drainage, and acute or chronic blood loss aggravate operative stress. Recognition and treatment of these conditions is mandatory. When the patient is losing fluid primarily from the upper gastrointestinal tract because of vomiting, alkalosis may result. If renal function is adequate, treatment consists of administration of 2.14% ammonium chloride with sodium chloride.

The achlorhydric patient with vomiting and upper gastrointestinal malignant disease may lose only water in vomiting and so not require extra chlorides. From jejunal and upper ileal obstruction the patient loses water and sodium, potassium, and bicarbonate, which are best replaced with 2 to 4 liters of water containing sodium lactate and a polyionic solution resembling extracellular fluid.

Vomiting as a result of low ileal or ileocecal obstruction causes a general water deficit and decrease in osmolar concentration. Polyionic solutions and extra sodium should be given. With diarrhea and acidosis, the combined use of M/6 sodium lactate and polyionic solution again may be helpful.

Addison's disease or less severe adrenal cortical deficits—conditions in which the major stress antagonists are missing—require vigorous preoperative treatment. The mortality rate is a direct reflection of the amount of functional adrenal cortex available. Replacement therapy consists of large amounts of intravenous cortisone and adrenal cortical extract. Desoxycorticosterone acetate is added to combat the anti-inflammatory effects of cortisone, and salt and water are replaced as needed. Norepinephrine, Neosynephrine, blood, plasma, or albumin may be required to restore blood pressure. Wide-spectrum antibiotics should be used prophylactically, and anesthesia should be local if possible. Proper management of the patient with adrenal cortical insufficiency not only decreases the risk of surgery but also prevents serious postoperative addisonian crises.

SURGERY

Since the thyroid hormone, if unchecked, is capable of exhausting body fuels, thyrotoxicosis, hypoadrenalism, or a combination of both may leave the patient totally unable to endure surgery. If the patient's thyrotoxicosis is overlooked preoperatively, the surgeon may interpret the postoperative thyroid storm as overwhelming infection, hemorrhage, or shock.

Thyrotoxic hypermetabolism, with hyperthermia, tachycardia, hypotension, and irregularities of pulse, requires immediate therapy. When the thyroid disease is recognized preoperatively, Tapazole or propylthiouracil may be used. If operation is urgently needed, 10% sodium iodide solution can be given intravenously.

Postoperative thyroid crisis requires oxygen, cold packs, sedatives, high fluid and caloric intake, and 2 gm. of sodium iodide in a 10% solution daily. Desoxycorticosterone acetate and adrenal cortical extract are given intramuscularly and an antithyroid compound orally.

The diabetic patient, because of depletion of electrolytes and inability to utilize fuels, is also a poor surgical risk. If the patient is in coma, surgery should be postponed. M/6 sodium lactate may be used to correct acidosis, and, if the patient is malnourished, glucose should be given intravenously with 1 unit of insulin per 2 gm. of sugar. Antibiotics are used prophylactically because of the increase in the diabetic patient's susceptibility to infection.

Mammaplasty for Hypertrophy of the Breasts

DANIEL KLEIN, M.D., JEWISH HOSPITAL OF BROOKLYN, advises plastic surgery to relieve the physical and mental discomfort of enlarged breasts. Hypertrophy often causes excessive perspiration, dermatitis, and even pain, and can hamper athletic, social, and professional life.

True hypertrophy, with excessive glandular tissue, can be corrected by excising sufficient breast tissue to permit reconstruction of a breast of normal size. The nipple is removed as a split skin graft and freely transplanted; scars are hidden almost completely in the inframammary fold.

For the patient with a flabby, flat type of pendulous breast with little glandular tissue, the nipple is left attached to the breast tissue, excessive skin and breast tissue are excised, the breast is transferred to a higher site, and the skin is draped over it, bringing the nipple out through a buttonhole in the skin.

For extensive, painful cystic mastitis, all glandular tissue is removed, leaving sufficient fat and skin to reconstruct a new breast with a free nipple transplant.

Mammaplasty for hypertrophy of the breasts. New York J. Med. 55:1600-1602, 1955.

Acute Inflammation of the Gallbladder

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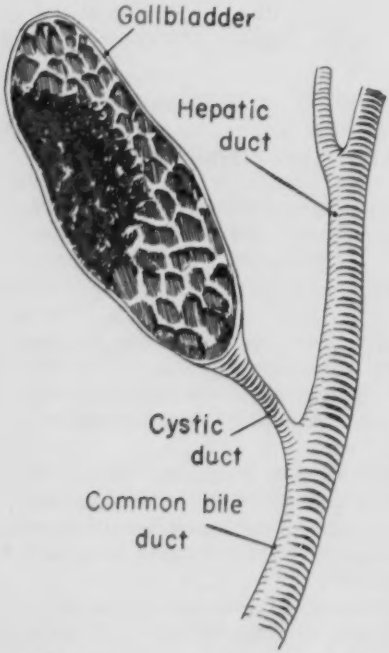
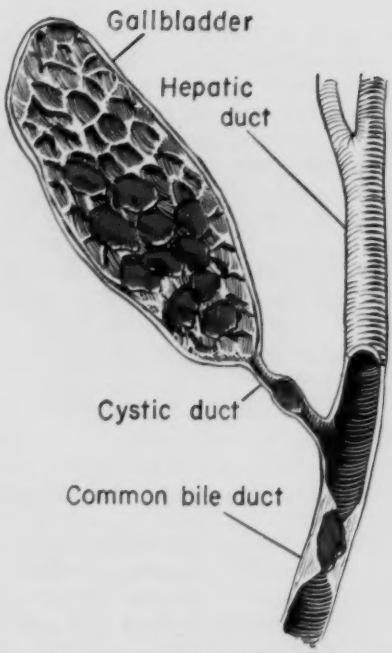
*Prompt cholecystectomy is recommended for calculous cholecystitis seen before the fourth day and after the tenth day from the onset of symptoms.**

CHOLECYSTITIS without stones is managed well by nonoperative treatment. In patients with acute calculous cholecystitis, however, especially in those over 50 years of age, prophylactic removal of the gallbladder is recommended. Although the over-all mortality rate for gallbladder removal in acute cholecystitis is 8.3%, the rate with prophylactic removal is only 0.5%.



Adenocarcinoma of the gallbladder



Location of stones in the gallbladder and cystic and common ducts

For the first two or three days of an inflammatory episode, gallbladder changes are vascular in nature

*Acute cholecystitis. Am. Surgeon 21:283-288, 1955.

and on a mechanical basis. At this time, the reaction to cholecystectomy is low. During the bacterial invasion stage, from the fourth to the tenth day, the hazards of operation are greater.

Of 468 patients with acute cholecystitis, a significant percentage had no previous symptoms, while slightly less than a third had had difficulty for over three years. Right upper abdominal pain and tenderness, leukocytosis, pyrexia, abdominal rigidity, and a palpable mass were most commonly noted.

Cholelithiasis was found in over 90%, choledocholithiasis in a little over 10%, and adenocarcinoma of the gallbladder in 1.3%. An estimated 5% of patients have carcinoma associated with cholelithiasis.

Gangrene and empyema occurred much more frequently when conservative therapy was attempted and then abandoned because of progressive symptoms. Gangrene was also relatively frequent in patients operated upon promptly.

The gallbladder was removed from 91% of patients; cholecystostomy was done in 12%. Choledochostomy was also performed in 28%, but the additional procedure did not increase mortality rate.

The case fatality rate is lower with prompt than with delayed operation if the individual is seen within seventy-two hours of symptom onset. Among patients treated from the fourth to tenth day of disease, the rate is almost twice as high in patients treated by prompt operation as in those treated conservatively. When surgery is immediate in patients seen after ten days, the death rate is negligible.

Slightly over a third of the deaths are a result of cardiovascular pathology, and a similar number are due to infection. Half the deaths occur after an avoidable delay in surgical treatment.

Atomic Radiation and Pregnancy

JAMES N. YAMAZAKI, M.D., STANLEY W. WRIGHT, M.D., AND PHYLLIS M. WRIGHT, M.D., UNIVERSITY OF CALIFORNIA, LOS ANGELES, in a study of the effects of the atomic explosion August 9, 1945 at Nagasaki, conclude that direct or indirect radiation to fetuses of women near the explosion is important in determining the outcome of the pregnancies.

Subjects studied were within 2,000 meters of the explosion. Of 98 pregnant women, 30 had major radiation signs of epilation, purpura, petechiae, or oropharyngeal lesions. In this group, 7 fetal and 6 neonatal deaths occurred, with an over-all morbidity and mortality rate of about 60%. Mental and physical deficiencies appeared in 4 of the surviving children. The over-all mortality rate for offspring of mothers with minor or no radiation injury was only 10%.

Outcome of pregnancy in women exposed to the atomic bomb in Nagasaki. Am. J. Dis. Child. 87:448-463, 1954.

Eclampsia and Hypertension

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Margaret Hague Maternity Hospital, Jersey City, N.J., and State University of New York, New York City

*The incidence of hypertension is increased significantly in posteclamptic women.**

THE relationship of preeclampsia-eclampsia to hypertensive disease is uncertain, mainly because of the disagreement concerning what level of blood pressure constitutes hypertension.

When hypertension is defined as blood pressure of 140 systolic and 90 diastolic, or more, the incidence after eclampsia is reported as around 22%. The incidence after preeclampsia is more difficult to determine since the diagnosis of preeclampsia is often equivocal. An appreciable number of women with prepregnant hypertension become normotensive during midpregnancy and are seen by the physician for the first time in this period. When the blood pressure rises toward the end of pregnancy, an erroneous diagnosis of preeclampsia is made.

Patients with latent hypertensive disease may first manifest the signs of hypertension during pregnancy. While hypertension usually precedes the appearance of proteinuria in the development of preeclampsia, apparently some patients with blood pressure elevations alone actually have essential hypertension instead of incipient preeclampsia. Undetected renal disease may also be mistaken for preeclampsia.

The prognosis for previously parous eclamptic women is much worse than for women who have eclampsia in the first pregnancy and carry to viability. This poorer prognosis applies to residual hypertension, recurrent toxemia, and life expectancy.

Factors which bear upon the recurrence rate and which may be used as prognostic criteria are [1] initial blood pressure before the onset of toxemia in the eclamptic pregnancy; [2] the height of blood pressure during eclampsia; [3] the duration of toxemia; [4] the presence or absence of hypertension and proteinuria ten days after delivery; and [5] the ratio of weight to height at subsequent examinations. The probability of recurrent toxemia increases with the number of unfavorable factors. The recurrence rate is 7 to 8% when none of the factors is present and increases tenfold with 4 or more.

In 335 pregnancies after eclampsia, the fetal salvage was 81%. The abortion rate was 11.6%. One-third of patients had recurrent toxemia in 25% of later pregnancies. Usually the recurrent toxemia was of slight severity.

*A continuing follow-up study of eclamptic women. Obst. & Gynec. 5:697-714, 1955.

Bilateral Polycystic Ovaries

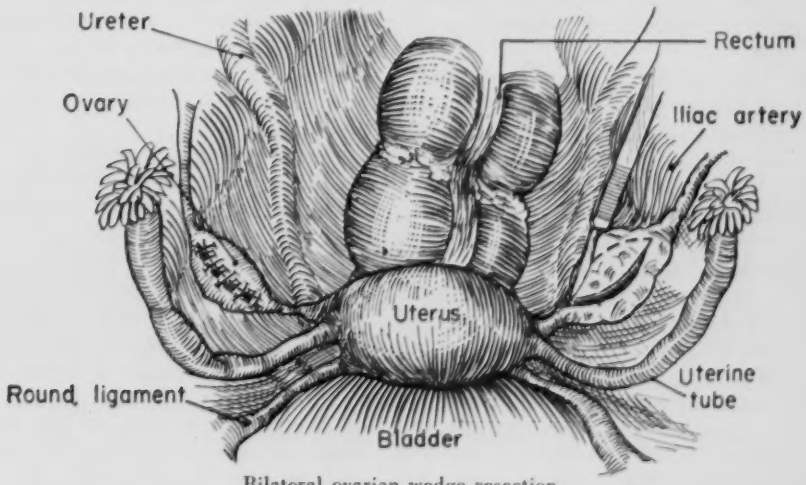
IRVING F. STEIN, SR., M.D.
Michael Reese Hospital, Chicago

*Menstrual function is restored by wedge resection in 95% of patients with the syndrome of bilateral polycystic ovaries.**

DIAGNOSIS of bilateral polycystic ovaries depends largely upon proper identification of the enlarged ovaries. The most valuable diagnostic technic when palpation of the pelvic organs is inconclusive is pneumoroentgenography, which reveals size, shape, and relation to the uterine size. Exploratory laparotomy to confirm a presumptive diagnosis is never justified.

The preferred treatment is bilateral ovarian wedge resection (see illustration). Additional surgical procedures at the time of ovarian resection are not recommended unless absolutely essential. Multiple punctures through the ovarian capsule favor the formation of adhesions which may result in irregular uterine bleeding. Ovarian suspension is performed only if the utero-ovarian ligaments are unusually long. Appendectomy is not advisable because the incised ovary is extremely vulnerable to infection.

Of 88 patients operated upon, 80 had amenorrhea associated with bilateral polycystic ovaries and 8 had menometrorrhagia.



Bilateral ovarian wedge resection

*The management of bilateral polycystic ovaries. Fertil. & Steril. 6:189-205, 1955.

Hirsutism in Females

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GUY F. HOLLIFIELD, M.D., W. N. THORNTON, JR., M.D.,
AND EDWARD P. CAWLEY, M.D.
University of Virginia, Charlottesville

*Most instances of hirsutism are idiopathic in nature, and the only effective treatment is manual removal of hair.**

In women, hirsutism occurs [1] with virilism, [2] with a nonvirilizing endocrine disorder, or [3] without an endocrine disease. Hirsutism of the first 2 types is suggested by menstrual irregularity, rapid growing and coarsening of excess hair, male hair distribution, deepening or hoarseness of voice, and decrease in breast size. A strong family tendency toward hirsutism suggests that no endocrine abnormality exists.

An enlarged clitoris is the most important physical finding indicative of an endocrine disorder. Other helpful findings are a male habitus with large muscles, acne of the face and the trunk, frontal baldness, an ovarian or adrenal mass, and an enlarged or prominent larynx.

A roentgenographic examination should include a view of the sella turcica and an excretory urogram. However, a negative urogram does not exclude an adrenal mass.

Laboratory studies include urinary 17-ketosteroids and gonadotrophins. The 17-ketosteroids are commonly elevated if hirsutism and virilism are due to adrenal dysfunction and are normal if hirsutism is caused by ovarian disease.

HIRSUTISM AND VIRILIZATION

Adrenogenital hyperplasia occurring before puberty may cause hirsutism of the face, chest, abdomen, and extremities; increased muscularity; amenorrhea; and hoarseness of voice. The clitoris is usually enlarged, and breast tissue does not develop. Roentgenographic study may be negative, and 17-ketosteroids may be elevated above the normal level of 5 to 15 mg. per twenty-four hours. Cortisone may reduce 17-ketosteroids to the normal range and induce menstruation, but hirsutism is usually not benefited.

Adrenogenital hyperplasia occurring after puberty may be manifested by hirsutism, virilism, irregular menses, enlarged muscles and clitoris, and elevated 17-ketosteroids. Pelvic examination may be normal. Subtotal adrenal resection is rarely curative, and cortisone is the preferred treatment in most instances.

A benign adrenal tumor may produce progressive hirsutism with virilism in a previously normal woman. Enlargement of the clitoris, loss of

*Hirsutism. GP 11:82-92, 1955.

libido, and development of acne, frontal baldness, male musculature, and deep voice are common. The 17-ketosteroids are elevated. Virilization decreases but some hirsutism usually persists after surgical removal of the tumor.

Arrhenoblastoma or *Leydig-cell ovarian tumor* may cause virilism. Onset of hirsutism at an early age may suggest adrenal dysfunction. However, 17-ketosteroid levels are normal. Surgical removal of the tumor may lessen masculine features, but hirsutism is generally not alleviated.

Hirsutism with slight virilism can be produced by *prolonged, irrational use of androgen preparations*. Unfortunately, hirsutism may not completely disappear after use of androgens is stopped.

HIRSUTISM AND NONVIRILIZATION

Bilateral polycystic ovaries can cause hirsutism, amenorrhea, and sterility without virilism. Clitoris size and 17-ketosteroids are normal. Bilateral wedge resection of the ovaries may be of some benefit, but treatment with hormones is unsuccessful.

Arrhenoblastoma of the ovary may produce hirsutism without virilism. Gonadotrophins and 17-ketosteroids are normal. Ovariectomy may restore normal menses and decrease frontal baldness and extraneous hair.

Adrenocortical hyperplasia may produce Cushing's syndrome with obesity, weakness, abdominal striae, polyuria, polydipsia, and irregular menses. The moon-shaped face characteristic of myxedema, acne, and male hair distribution are common. Blood pressure, blood glucose, and urinary 17-ketosteroids may be elevated. Pituitary irradiation or subtotal adrenal resection is of benefit.

SIMPLE HIRSUTISM

Male distribution of hair without virilizing endocrine disease may be familial or associated with obesity and irregular menses or diabetes mellitus.

Fine Plain Catgut for Episiotomy Repair

WILLIAM J. FITZGERALD, M.D., ALBANY MEDICAL COLLEGE, ALBANY, N.Y., reports that healing is better and quicker when 000 plain suture is used instead of 00 chromic catgut for episiotomy repair. The finer suture can be employed for either median or mesiolateral episiotomy and offers the obstetrician no technical difficulty.

When 000 plain catgut was used, 90 of 100 patients had no discomfort, and none had pain severe enough to require anodynes. When 00 chromic catgut was employed, 80 of 100 patients had no discomfort, but 5 required medication to relieve pain at the episiotomy site.

Evaluation of episiotomy repair with number 3-0 plain catgut in relation to perineal pain. New York J. Med. 55:659-660, 1955.

Surgery for Bartholin's Cyst

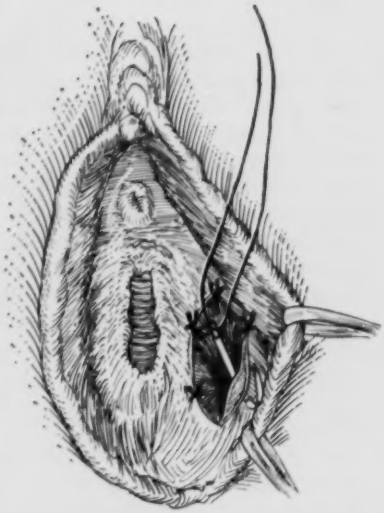
EARLE M. WILDER, M.D.
Sinai Hospital, Baltimore

*A simple office procedure for Bartholin's cyst or abscess forms a new ostium and changes the wall of the lesion into a duct, thereby preserving communication with the functioning gland.**

A CYST or abscess of the vulvovaginal gland actually consists of a pathologic dilation of the duct of the gland. The ostium becomes occluded by an inflammatory reaction and allows the duct to become cystic or abscessed. Usually, the process is gradual and the gland remains functional. The cyst wall is really a greatly dilated duct.

Gonococcus is rarely the infecting organism, and cultures more often are sterile. Colon bacillus, streptococci, and staphylococci sometimes are causative agents.

Radical extirpation of the cyst wall is a common procedure but may be difficult and hazardous. Hematoma dissecting into the labia, rectum, buttocks, bladder, or thigh, with severe hemorrhage, may result. Loss of physiologic function and lack of important lubrication, with dyspareunia and dryness of the vulva when walking, are frequent consequences of radical surgery. Many patients have deformed and scarred vulvas.



Suture of edges of the incised cyst or abscess wall to the skin of the labia and vestibule

A simple office procedure based upon reestablishment of the ostium of the duct obviates hospitalization and eliminates hemorrhage, scarring, and physical discomfort. Ample drainage of the diseased duct is afforded, and the gland functions normally.

The technic treats the abscess and cyst similarly. Local anesthetic is applied, and a small wheal is raised along the intended line of incision. An incision about 2 cm.

*A simple method of treating vulvovaginal (Bartholin) cyst and abscess. South. M. J. 48:460-464, 1955.

long is made over the cyst wall or abscess close to the original opening of the duct and in the region of the hymen. Silk sutures, 4 or 5, are placed from inside the cyst or abscess wall to and including the skin of the vestibule and labia (see illustration). An iodoform drain is inserted in the abscess or cyst cavity and removed in about a week.

Sutures are removed in three weeks, and a new patent ostium is evident. The size of the opening accommodates to demands made by the secretory activity of the gland. No aftercare other than personal cleanliness is required.

The procedure may be done immediately post partum if infection is not an acute process.

Classification of Cervical Cancer

J. V. MEIGS, M.D., AND WINIFRED LIU, M.D., MASSACHUSETTS GENERAL HOSPITAL, BOSTON, propose a classification of cervical cancer, based on findings at the time of radical surgery and from microscopic examination of the specimen, that serves as an adjunct to the international classification. The classification is as follows:

- *Class O*—Carcinoma in situ, also known as preinvasive carcinoma, intraepithelial carcinoma, or microcarcinoma
- *Class A*—Carcinoma confined strictly to the cervix
- *Class Ao*—No tumor in the cervix in the surgical specimen after a positive biopsy of infiltrating carcinoma
- *Class B*—Carcinoma extending from the cervix to involve the vagina except for the lower third. The carcinoma extends into the corpus and may involve the upper vagina and corpus. Vaginal or uterine extension may be by direct spread or by metastasis.
- *Class C*—Carcinoma involving paracervical or paravaginal tissue by direct extension or by lymphatic vessels or in nodes within such tissue. Spread may be by vaginal metastasis or by direct extension into the lower third of the vagina.
- *Class D*—Lymph vessel and node involvement beyond paracervical and paravaginal regions, including all lymph vessels or nodes in the true pelvis, except as described in class C. Metastases occur to ovary or tube.
- *Class E*—Carcinoma that has penetrated to the serosa, musculature, or mucosa of the bladder or to the colon or rectum
- *Class F*—Carcinoma involving the pelvic wall.

The five-year survival rates for 250 patients who were operated on for cervical carcinoma are as follows: class O, 100%; class A, 82%; class Ao, 93%; class B, 82%; class C, 50%; class D, 37%; class E, 10%; and class F, 0%.

Surgical and pathological classification for cancer of the cervix. Surg., Gynec. & Obst. 100:555-558, 1955.

Partial Colpocleisis for Uterine Prolapse

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Beth Israel and French hospitals, New York City

*Partial closure of the vaginal canal is useful in postmenopausal women with total or partial inversion of the vagina.**

PROLAPSE of the uterus and inversion of the vagina after hysterectomy is a common gynecologic condition seen in elderly women. Such patients are usually not good candidates for extensive surgery because of senility or associated conditions such as hypertension, cardiac disease, nephritis, or diabetes.

Vaginal inversion with total prolapse of the uterus must be carefully distinguished from inversion with so-called prolapse of a hypertrophied cervix. The former, or true prolapse, is always preceded by unfolding of a cystocele.

The Le Fort partial colpocleisis procedure has the following advantages:

- No shock occurs, and loss of blood is slight.
- Only local or very light general anesthesia is required.
- Performance is rapid.
- Lateral canals which afford a natural exit for cervical secretions are created.
- Ambulation is possible on the first postoperative day.
- No further treatment other than an occasional douche for cleanliness is necessary. Therapeutic douches may be given through the channels without causing retention.

Disadvantages include inaccessibility of the uterus with postmenopausal bleeding, difficulty in diagnosis of carcinoma of the cervix or fundus after operation, and preclusion of coitus.

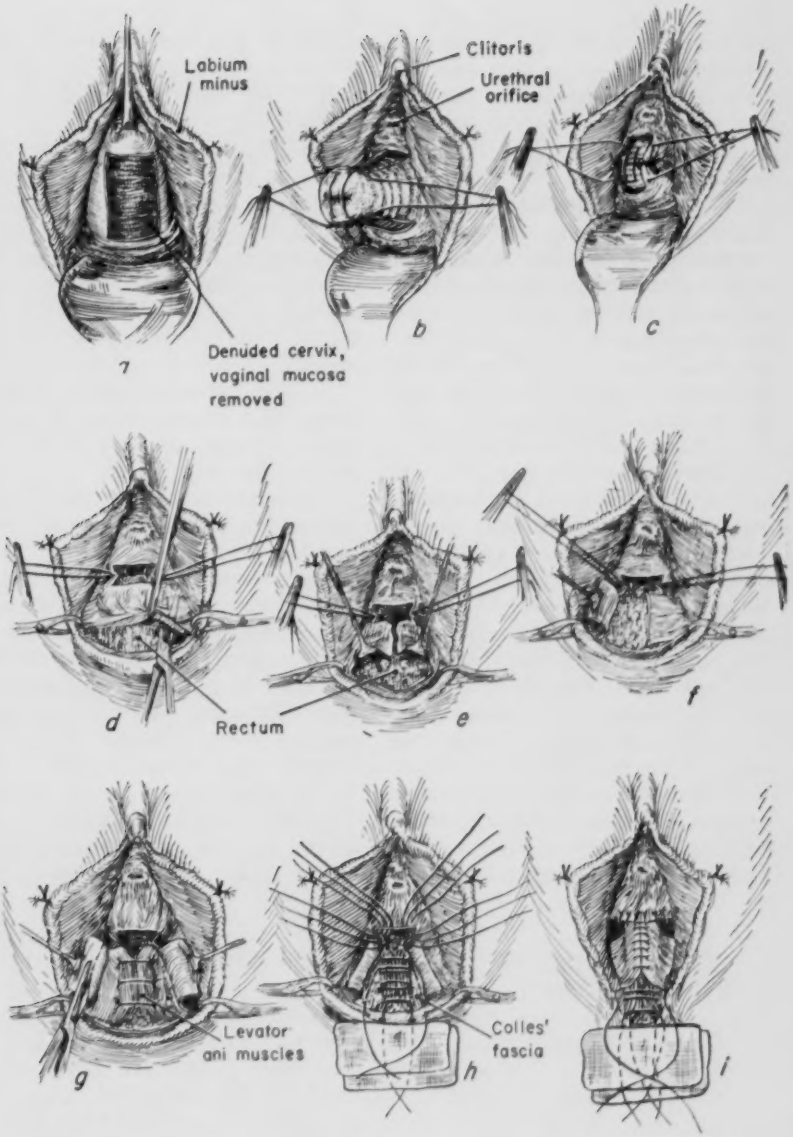
The procedure is limited to selected patients and is most suitable for elderly women with complete procidentia or with inversion of the vagina after hysterectomy. The operation is also applicable in partial prolapse when usual operative repair might result in high morbidity or fatality because of a serious associated disease.

If possible, operation is postponed if vaginal tissues are noticeably atrophic or ulcerated. Vaginal insertion of estrogenic hormones for one to two weeks preoperatively may increase the local blood supply and produce a thick mucosa. The night before operation, a vaginal suppository of 300,000 units of penicillin is inserted. No douche is given.

Local infiltration of 0.5% Novocain combined with pudendal block is safe and generally effective. A small amount of gas is usually administered toward the end of the procedure.

In the operating room, the pa-

*Partial colpocleisis: the Le Fort procedure. Obst. & Gynec. 5:617-627, 1955.



Le Fort procedure for correction of uterine prolapse and vaginal inversion

tient is placed in the lithotomy position, the vagina is wiped with a dry sponge, and the vagina and surrounding areas are painted with an antiseptic skin preparation. The patient is draped, and a short, weighted speculum is inserted into the vagina.

The labia are stitched to adjacent thighs. A rectangular area of vaginal mucosa is denuded on the posterior vaginal wall, beginning 1 cm. below the external os of the cervix and extending to within 2 cm. of the mucocutaneous junction of the perineum. A similar area is denuded on the anterior vaginal wall from 1 cm. below the urethra to 1 cm. above the external os (Fig. *a*).

The denuded areas are approximated with No. 00 chromic catgut. The suture is inserted at the left outer lower edge of the denuded surface, catching a piece of vaginal mucosa of the anterior vaginal wall. The suture is then inserted through the raw area for about 1 cm., through the lower cut edge of the denuded area into the upper cut edge of the posterior vaginal wall, and through the raw area that is parallel to the corresponding suture line.

The suture is brought through the cut edge of the lateral denuded area. The left border of the anterior vaginal wall is then sutured to the left border of the posterior vaginal wall. These sutures are held in a clamp (Fig. *b*).

A similar stitch is placed on the right side of the denuded area. The sutures are inserted in pairs, first on the left and then on the right side, and are tied. As each pair of sutures is tied, the anterior and posterior vaginal walls are approximated, and the prolapse is further reduced (Fig. *c*).

A high perineorrhaphy, which brings the levator ani muscles together, is essential to a successful result (Figs. *d-i*).

The posterior vaginal wall should always be denuded first so that blood from the anterior wall will not drip into the operative field. The urethra should not be approached closer than 1 cm. because, after suturing, the traction of the posterior upon the anterior vaginal wall may cause incontinence. The mucosa is best dissected free with a knife edge directed toward the mucous membrane at all times. The diameter of the created canal should be about one-third the width of the lateral mucosal strip.

¶ STREPTOCOCCAL INFECTIONS IN CHILDREN may be eradicated within twenty-four hours after a single injection of 600,000 units of benzathine penicillin G (Bicillin). Burtis B. Breese, M.D., and Frank A. Disney, M.D., of the University of Rochester, N.Y., report that this dosage cured the acute disease and prevented rheumatic fever, nephritis, suppurative complications, and recurrences in 94% of 1,175 patients. Reactions to the drug were few and slight.

Pediatrics 15:516-521, 1955.

Infectious Hepatitis in Children

CLIFFORD G. GRULEE, JR., M.D., AND
HUGH PAGE BRAWNER, JR., M.D.
Tulane University, New Orleans

*Recognition of infectious hepatitis in infants and children is frequently difficult because of vague symptomatology and lack of icterus.**

THE incidence of infectious hepatitis is highest in children 4 to 14 years of age. The actual incidence may be even higher than recorded, since the disease is often not accompanied by jaundice in children. Nonicteric involvement makes control of outbreaks difficult because virus may be passed for long periods of time in the stools.

Up to 10% of the general population may harbor the virus and thus serve as possible sources for exposure. Of adults over 30 years of age, 35% have built up immunities, indicating that a high proportion of youngsters are exposed.

The disease is spread by the fecal-oral route. Respiratory spread apparently is not likely. Infection may be spread parenterally, since the virus can be recovered from the blood of infected persons for a limited period of time.

DIAGNOSIS

In infants, the usual incubation period is twenty to thirty days. First symptoms are fever, irritability, and, often, rhinitis. Anorexia, nausea, vomiting, and diarrhea ensue. An enlarged, tender liver is commonly found, at times associated with severe abdominal pain and rigidity. During the prodromal period, liver function studies are abnormal and often remain so for a long time after apparent recovery.

An increase in the direct serum bilirubin reaction is noted early even in nonicteric infants and occurs before the total bilirubin becomes elevated in jaundiced patients. The thymol flocculation test is positive early and does not return to normal for a long time. Thymol turbidity, cephalin-cholesterol flocculation, total serum bilirubin, urinary urobilinogen, and oral or intravenous hippuric acid excretion tests are recommended for initial evaluation and for observation during the disease process.

When disease is prolonged, the bromsulphalein test and serum albumin and prothrombin time determinations should be used for evaluation.

Virus may continue to be excreted in the stools for many months after liver function has returned to normal. However, most infants apparently recover completely without permanent liver damage.

In older children, the disease begins with a slight prodrome of

*Infectious hepatitis in children. J. Louisiana M. Soc. 107:188-193, 1955.

fever for two to four days and subsequent apparent improvement for three to eight days. Jaundice then appears, accompanied by an enlarging, tender liver. Icterus intensifies for three to seven days, then serum bilirubin falls rapidly, bile reappears in the stool, and nausea and liver pain rapidly subside.

With fatal disease, symptoms progress to convulsions and coma, and death occurs within ten days of onset. Usually, however, jaundice gradually fades in one to three weeks after the crisis. In this convalescent stage, liver function may be abnormal for at least two to three weeks.

MANAGEMENT

Supportive therapy, particularly complete bed rest, is of great importance. Activity increases nausea, aggravates pain, leads to prolongation of the active phase, and increases the incidence of permanent liver damage. Children are probably best kept out of school until all liver function tests are normal.

Palatability of diet is more important than rigid control of types of food. The diet should be liberal in proteins and adequate in vitamins. Additional vitamins are not necessary unless food intake is noticeably decreased.

Antibiotics do not have direct effect on the virus, and ACTH and cortisone should not be used except in severely ill or comatose children.

Prevention of secondary infection is important. Isolation of active cases, proper sanitation, and aseptic technics are essential. Temporary protection is conferred by gamma globulin for as long as six weeks. The dose is 0.01 cc. per pound of body weight given at least seven days before expected onset of jaundice.

Aerosol for Constipation

JAMES L. WILSON, M.D., AND DAVID G. DICKINSON, M.D., UNIVERSITY OF MICHIGAN, ANN ARBOR, report that the synthetic wetting agent, aerosol OT (dioctyl sodium sulfosuccinate), is successful in therapy for fecal impaction and other severe types of constipation. The agent can be administered regularly for indefinite periods of time without causing toxicity or decreasing in effectiveness.

When administered orally or by enema, the material allows a hard fecal mass to be penetrated by water or mineral oil. Orally, 2 cc. of a 1% aqueous solution of aerosol is given three times daily in milk or fruit juice. By rectum, 5 cc. of 1% aerosol in 1 or 2 oz. of mineral oil is administered. For small infants with hard, lumpy feces, 15 drops of a 1% solution can be added to the formula twice daily.

The agent has no constant or significant effect on fat or protein absorption from the intestine.

Use of dioctyl sodium sulfosuccinate (aerosol O. T.) for severe constipation. J.A.M.A. 158:261-263, 1955.

Wedge Resection for Scoliosis

ROBERT ROAF, M.D.
Liverpool, England

*Up to 90° correction can be obtained in progressive, severe, uncompensated scoliosis by wedge resection of the apex of the curve.**

A TRANSECTION jacket results in considerable cosmetic improvement of scoliosis, but actual correction is not so noticeable, since straightening is achieved in the mobile transitional sections of the curve, while the central fixed portion is not affected.

An attack on the apex of the curve is the most rational approach to the problem. The procedure is adaptable to both the thoracic and the lumbar areas. A competent anesthetist is essential for the operation.

The incision is made over the transverse processes on the convex side of the peak of the scoliotic curve. A longitudinal split is made in the scapular muscles and the longitudinal spinal muscles, and the deep oblique spinal muscles are freed from the transverse processes, laminae, and inner ends of the ribs. Thus, 2 transverse processes, 2 laminae, and the medial ends of 2 ribs are exposed.

Ligaments attached to the medial rib ends are severed, and the medial 3 in. of 2 ribs is resected. The intercostal nerves are then identi-

Ribs resected and vertebral wedge removed: [*a*] posterior view with cut bone edges in color; [*b*] cross section showing amount of vertebra removed

*Wedge resection for scoliosis. J. Bone & Joint Surg. 37-B:97-101, 1955.

fied. The corresponding laminae and pedicles are excised by nibbling, which exposes the dura and the bodies of the vetebrae.

The intervertebral disk space and wedges from the adjacent vertebral bodies are removed with a nibbling forceps and a small gouge or burr (see illustration).

The intervertebral disk space and wedges from the adjacent vertebral bodies are removed. The cavity is packed with a hemostatic agent, and the wound is sutured.

A plaster jacket is carefully and precisely fitted, with as much correction of the scoliosis as possible. The jacket must include the arm and leg on the concave side of the curve. An Abbott frame may be helpful in securing the desired correction.

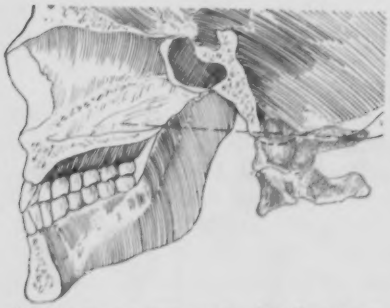
After the plaster dries, the jacket is wedged open by stages until the greatest correction point is reached. The correction must be secured within a reasonably short period, and the spine is then held in position until the partially resected vertebral bodies fuse.

A spinous process and part of the opposite lamina can be resected in some older patients. This makes correction easier but may result in an unstable spine.

No particular complications or hazards were noted in 16 patients treated with wedge resection.

Headache with Basilar Impression

WILLIAM R. CHAMBERS, M.D., ATLANTA, notes that severe and prolonged headache in the occipital area may be the only symptom or sign of basilar impression.



Though long tract signs, nystagmus, vertigo, and other neurologic signs are generally noted before basilar impression is diagnosed, roentgenographic examination should be made when intractable headache is the only manifestation. If the upper limit of the odontoid process is above a line extending from the posterior tip of the hard palate to the posterior internal rim of the foramen magnum, basilar impression is likely (see illustration). Diagnosis is established at operation if the arch of the atlas extends into the circle of the foramen magnum.

Treatment consists of suboccipital decompression and division of nerve roots. Rhizotomy alone is inadequate.

Headache as the first and only sign of basilar impression. J. Bone & Joint Surg. 37-A:189-192, 1955.

The Painful, Stiff Shoulder

SAMUEL L. TUREK, M.D.
Weiss Memorial Hospital, Chicago

*Conservative treatment is usually adequate for frozen shoulder, but operation may be necessary for economic reasons, recurrences, or intraarticular lesions.**

EXAMINATION of the patient with a painful, stiff shoulder usually reveals a point of tenderness above and just adjacent to the greater tuberosity. If disability is limited to this region, the patient may shrug the shoulder when attempting abduction or perform the motion without discomfort. When the condition is more advanced, tenderness is demonstrable along the bicipital groove.

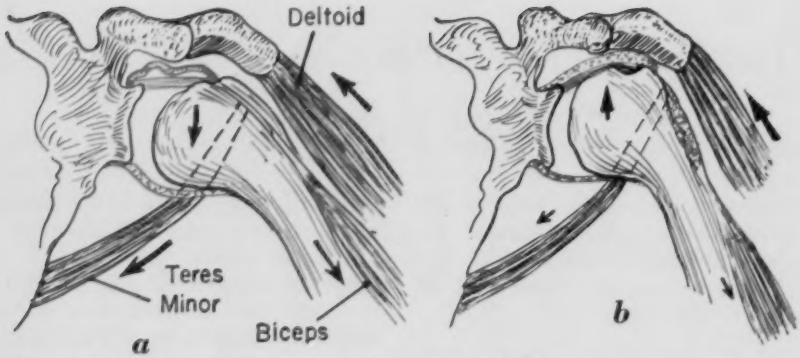
Active abduction and forward flexion are tested with the arm in internal and external rotation. Rotation of the humeral head may bring the tender lesion to the point of greatest compression and thus reveal the discomfort and shrugging mechanism that are not noted in other phases of the rotation arc.

Passive motion is compared with active motion. In late stages, passive motion does not differ greatly from the active. This is in contrast to the early, nonadhesive stage, when passive motion greatly exceeds the active; the patient may even possess full range.

A local anesthetic injected into the tender area removes the possibility of pain restricting the range because of muscle spasm. If a full range of active motion is possible, the condition is considered in a very early stage without adhesions. If, however, restriction is great and comparable to the range observed before anesthetization, a late lesion is obvious. If good abduction is obtained actively, attempts to maintain the position against resistance may demonstrate weakness of the arm. This suggests that the maintenance and fixation of the head in the glenoid is not obtainable because of interruption of the musculotendinous cuff.

Roentgenograms usually reveal the humeral head very high in the glenoid with the upper edge of the head superimposed on the acromion. Normally, when downward traction is exerted on the arm or the biceps flexion is strong and exerted against resistance, the humeral head descends and the humeroacromial space widens (Fig. *a*). If this does not occur, the capsule is greatly contracted and adhesions and fixation are extreme (Fig. *b*). The greater tuberosity may be reduced in size and sclerotic and irregular changes at the point of attachment of the cuff indicate long-continued friction and irritation (Figs. *c* and *d*). The area just

*The painful and stiff shoulder. J. Internat. Coll. Surgeons 22:695-706, 1954.



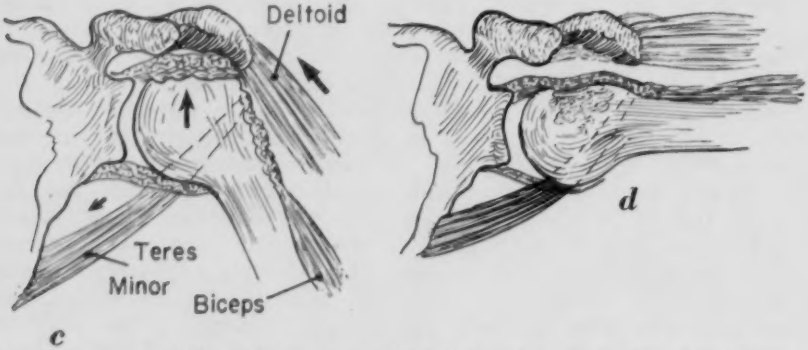
Normal [*a*] and abnormal [*b*] mechanics of abduction at glenohumeral joint. Arrows indicate direction and, by size, relative strength of force. With abnormal abduction, repeated compression of capsule about greater tuberosity leads to capsular congestion, bony sclerosis, and recessional changes in tuberosity. Capsules, tendons, and degenerative changes are shown in color.

proximal to this tuberosity is the trigger point.

Conservative treatment should be tried first in all cases. The patient is placed in absolute bed rest. The arm is placed in a dependent position or traction is exerted distally to eliminate the humeroacromial compression.

Ice packs are applied for prolonged periods to reduce congestion. Sedatives are given until the pain subsides completely.

Arthrotomy is done [1] when conservative therapy fails, [2] for recurrence, or [3] whenever gross damage to the cuff, tendon, and bony structures is suspected.



Later changes: [*c*] Superior capsule and bicipital tendon are swollen and adherent to humeral head and groove; inferior capsule is thickened and contracted; deltoid muscle cannot overcome condition. [*d*] Repeated attempts at abduction have worn down soft tissues and caused sclerotic and cystic changes in the adjacent bone; inferior capsule has stretched.

Fractures of the Fingers and Hand

ROSWELL K. BROWN, M.D.
University of Buffalo, N.Y.

*Accurate diagnosis and consideration of the patient's vocation and avocations are essential for good results in the treatment of hand injuries.**

WHEN the terminal tufts of the bones of the fingers and thumbs are fractured, laceration in the nail bed is often held open by a hematoma beneath the nail. If the hematoma is not removed, the nail may be permanently deformed.

If the nail becomes black immediately after an injury, the nail is removed with a blunt instrument such as the duckbilled hemostatic forceps. The jagged fragments of the nail bed are carefully replaced and bandaged snugly into position to lessen bleeding. A simple dressing allows the nail bed to heal without appreciable scarring.

Avulsion fracture of the distal insertion of the extensor tendon—baseball finger—is best reduced by placing the distal interphalangeal joint into extension and the proximal interphalangeal joint in flexion. The position is maintained for three to four weeks. Frequent readjustments of the fixation are necessary.

Fig. 1. Displaced and overriding phalangeal fracture corrected by overextension

Fractures of the middle phalanges often show little or no tendency to displacement and overtreatment should be avoided. In fractures with displacement, swelling may obscure the diagnosis, and 2 roentgenograms at right angles should be made.

*Fractures of the fingers and hand. Industrial Med. 24:203-206, 1955.

Torsional deformity may not be shown by roentgenogram but can be found by physical examination. When all the fingers are partially flexed, the tips should point toward the navicular bone.

Fractures of the phalanges with displacement and overriding (Fig. 1*a*) may be difficult to correct by traction because broken ends of the bone have torn holes through the surrounding fibrous-tissue aponeurotic structures. The shortening should be first corrected by overextension and then the angulation can be restored without interposition of the soft parts (Fig. 1 *b, c, d*).

Fractures of the phalanges are treated in semiflexion, the relaxed position of rest, by the use of molded plaster of paris splints and the support of adjacent digits. If simple methods of reduction and splinting are not effective, position may be maintained by placing a stainless steel wire through the pulp of the finger with incorporation in the plaster of paris. Traction on the fingers with elastic bands or springs is not advocated. A wire or pin through the bone will give better traction. Little force is required to maintain a fractured digit in position.

"Human bite" open fracture of the head of the metacarpal occurs when the fist comes in contact with incisor teeth. The teeth usually pierce the skin over the knuckle and pass through the extensor plate and articular cartilage into the cancellous portion of the bone of the head of the metacarpal. Debridement and drainage after fixation in the position of injury are required. Considerable extension of the soft-tissue wound is often necessary.

Fractures of the shafts and the necks of the metacarpal bones usually have angulation pointing dorsally with the metacarpal head displaced into the palm (Fig. 2*a*). Easy reduction is possible by flexing the metacarpophalangeal joint and applying gentle pressure in the axis of the proximal phalanx so that the distal fragment is lifted dorsally (Fig. 2*b*). If the metacarpophalangeal joint is allowed to extend, the deformity will recur.

Fig. 2. Metacarpal fracture reduced by flexion of the metacarpophalangeal joint

The best position for fixation of injured hands is the position of rest with the metacarpophalangeal joints in flexion. If the lateral ligaments of the metacarpophalangeal joints are allowed to contract with the fingers splinted in extension, restoration of function in the joints is extremely difficult.

Roentgenograms should be made immediately after fixation and repeated within the first week if displacement is likely. Complications are noted at return visits.

Treatment with Ultrasonic Energy

LT. COL. JOHN H. KUITERT, M.C., AND MAJ. EMMA T. HARR
Brooke Army Medical Center, Fort Sam Houston, Tex.

*Special training and technics permit the use of ultrasonic energy in therapy of many musculoskeletal and allied disorders.**

ULTRASOUND waves are the vibrations of sound waves with frequencies above the hearing range of the human ear. The most commonly used frequency for medical purposes is between 800,000 and 1,000,000 per second (0.8 to 1 megacycle). The sound waves produce a heating effect because of the energy involved in motion.

Ultrasonic waves obey the same laws of acoustics and physics as do the waves of audible sound. Ultrasound is generated by utilizing the piezoelectric effect of crystal, and vibration is produced when the crystal is energized by a high-frequency oscillator. A crystalline quartz plate is encased in a metallic sound head or transducer, which is operated in direct contact with the part of the patient's body that is being treated.

The effects of ultrasound energy are varied. Known mechanical effects include aggregation, cavitation, dispersion, and emulsification. Some chemical effects are depolymerization, hydrolysis and inversion of sugar, luminescence, and oxidation. Biologically, injurious and lethal effects on experimental organisms, disruption of tissue, vesiculation of skin, and destruction of growing bone occur. Histologic alterations apparently are caused by selective heating.

Since air is not of sufficient density to pass ultrasound waves easily, some type of coupling or conductive medium is required. In the direct method of application, oil of high viscosity, such as liquid paraffin, petroleum jelly, or mineral or castor oil, applied directly to the patient's body, will act as a binding agent when the treatment head is pressed lightly against the skin. A circular or stroking motion may be used. When the sound head is held stationary against the skin, undesirable destruction of tissue may result.

In the indirect method, coupling is accomplished by immersion of both the part to be treated and the treatment head in water, since ultrasound waves pass freely through water. The sound head is held at a distance of ½ to 1 in. from the part being treated (see illustration). Loss of energy is offset by increase in intensity.

Therapeutic dosages must always be individualized and limited. Pain is a distinct warning that local intensity is too great. Intensities of 0.5 to 2 watts per square centimeter

*Introduction to clinical application of ultrasound. Phys. Therapy Rev. 35:19-25, 1955.

are generally most useful. Larger doses may be given with the stroking method than with the stationary technic. Underwater treatment requires greater intensity because of absorption and reflection.

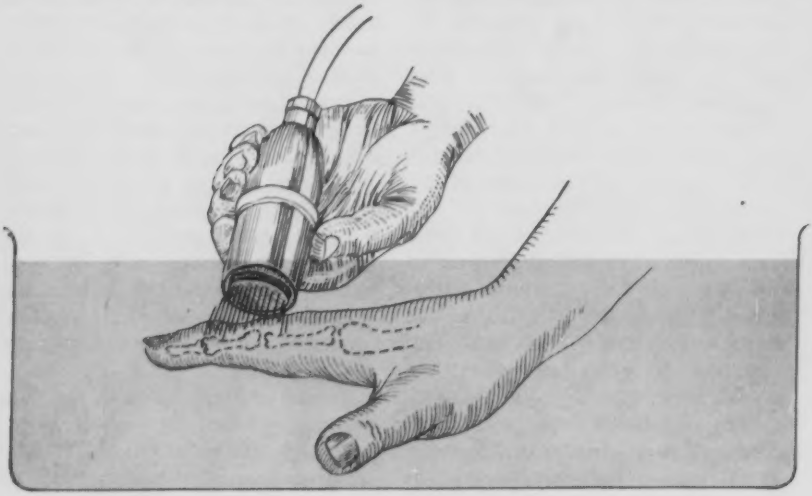
Treatment time is progressive, beginning at five minutes and increasing to no more than fifteen minutes per treatment area. When possible, a treatment series is 6 to 12 applications given on consecutive days. Therapy is repeated at two-week intervals if necessary.

faces, since not all the tissue in the area is treated simultaneously.

Administration and dosage are facilitated by outlining the area to be treated with cut-out patterns of predetermined size.

Ultrasound therapy relieves muscle pain and spasm and increases range of motion. Ultrasonic energy is also used for such conditions as bursitis, capsulitis, fibrositis, and periarthritis.

Ultrasonic energy should not be applied to the eye, lower cervical



Indirect method of treatment with ultrasound energy

Several factors must be considered in determining individual dosage. Acute conditions need sedation as provided by low-intensity treatment, whereas chronic indolent conditions require stimulation with higher intensities. High intensity is used initially in treatment of deep-seated lesions. Treatment time is lengthened with extensive body surfaces, since not all the tissue in the area is treated simultaneously.

sympathetic ganglia, heart, genitalia, pregnant uterus, or growing bone. Anesthetic areas should be avoided, and ischemic tissues and vascular lesions are treated with special caution.

Complications such as skin erythema and superficial burns may occur and usually result from faulty technic.

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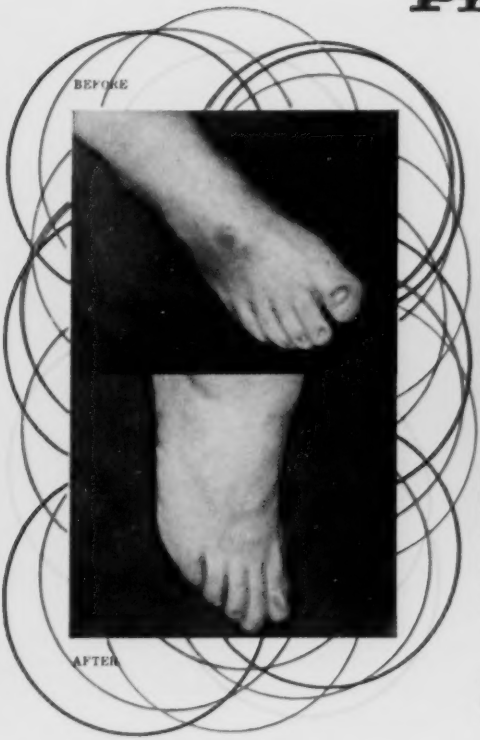

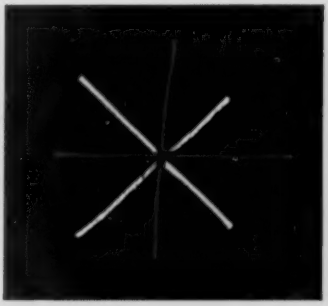

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Sixty-eight-year-old patient with arteriosclerosis obliterans cellulitis; sluggish response to saline dressings and procaine penicillin 300,000 units daily. Healing speeded by addition of oral Priscoline, 25 mg. 4 times daily for 1 week, 25 mg. every 3 hours thereafter. Healing completed within 6 weeks.

Tablets, 25 mg. (scored)
Elixir, 25 mg. per 4 ml.
Multiple-dose Vials, 10 ml., 25 mg. per ml.

1. Photographs and clinical data by courtesy of R. I. Lowenberg, M.D., Consultant in Vascular Surgery, Connecticut State Hospital, Middletown, Connecticut.

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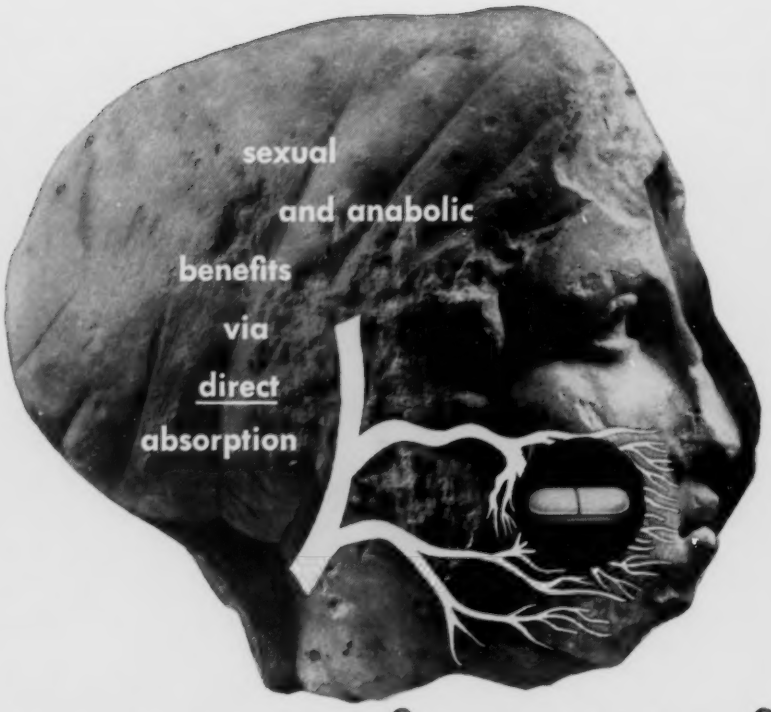

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Physical Therapy for Injured Hands

S. MALVERN DORINSON, M.D.
San Francisco

*After anatomic healing of an injured hand, mobilization activities are essential to relieve pain and stiffness.**

WHEN a hand is removed from an immobilization apparatus, stiffness may be due to:

- Edema involving all soft-tissue structures, particularly the joint capsules
- Shortening of joint capsules and other soft tissues
- Disuse of the intrinsic muscles
- Pain, which limits active motion of the joints.

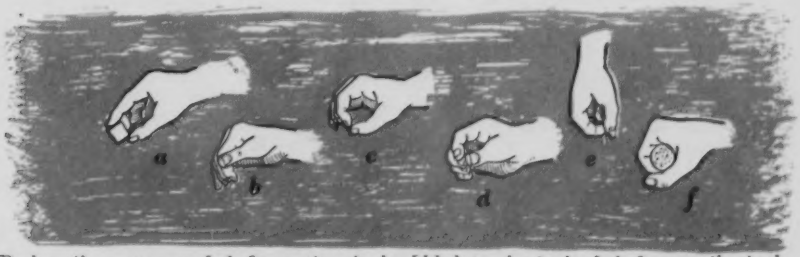
All of these factors can be corrected by physical and occupational therapy.

Heat is valuable in improving the circulation and thus the metabolism of the hand. Heat also anesthetizes the endings of the pain receptor nerves, and the patient is then able to increase his voluntary effort.

The whirlpool bath is the most efficient method of heating. The hand is immersed for ten to fifteen minutes in water maintained at 105°. The patient can simultaneously exercise the hand actively by squeezing a sponge under water. Hot soaks at home are advised only when the patient is properly advised and can do exercises at the same time.

Massage can be used to relieve edema. By stretching the tight skin, elasticity can be restored and skin circulation improved. Passive exercise, including stretching and manipulation, aids mobilization of the phalangeal joints by stretching collateral ligaments. These exercises must be done gently, however, as forceful manipulation can harm the joint capsule.

(Continued on page 132)



Prehensile patterns: [*a*] finger-tip pinch, [*b*] lateral pinch, [*c*] fingernail pinch, [*d*] three-jawed chuck, [*e*] hook or snap, and [*f*] cylindrical grasp

*Physical medicine for injured hands. California Med. 82:319-321, 1955.

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Treatment with Floraquin tablets may be supplemented with insufflation of Floraquin powder by the physician. Frequency of insufflation is determined by the physician, but is of prime importance immediately after the first menstrual period.

Warm acid douches (2 ounces of 5 per cent acetic acid or white vinegar to 2 quarts of warm water) may be taken as often as desired for hygienic purposes.

Floraquin contains Diodoquin® (diiodohydroxyquinoline, U.S.P.), the safe and effective protozoacide and fungicide. Lactose, anhydrous dextrose and boric acid are included to help restore the normal acid pH of the vaginal secretions. Such an acid vaginal medium then encourages the growth of normal flora and makes the environment unfavorable for pathogens.

A Floraquin applicator is supplied with each box of 50 (a new package size) Floraquin tablets. G. D. Searle & Co., Research in the Service of Medicine.

SEARLE

Active exercise is the most effective phase of therapy. To function as an all-purpose grasping organ, the hand uses several prehensile patterns. The most commonly used is the finger-tip pinch (Fig. *a*). About 60% of objects are picked up in this manner, while over 30% are picked up by the lateral pinch (Fig. *b*). The fingernail pinch is used for very small objects such as pins on a flat surface (Fig. *c*).

The three-jawed chuck (Fig. *d*) is formed by the thumb against the index and middle fingers and is employed for handling small cylindrical objects. The hook is used for carrying heavy loads (Fig. *e*), the cylindrical grasp for gripping large objects (Fig. *f*).

All these functional patterns must be worked out with a definite exercise routine. The various grasps should be practiced on a rubber sponge. Rubber balls are unsatisfactory.

Patients with painful hands usually close the hand by flexing at the metacarpal joints first. Such use of the intrinsic muscles prevents the long flexor tendons from flexing the distal phalanges back to the palm.

The patient must be taught to close his hand first by flexing the distal interphalangeal joint, then the proximal interphalangeal joint, and finally the metacarpophalangeal joint. Opening the hand is done in reverse order.

The thumb and all intrinsic muscles of the hand must be strengthened. Rolling a sheet of newspaper into a ball with one hand without releasing the paper is an excellent exercise to strengthen fingers. Arm muscles may be strengthened by utilizing spring handles, weights, and pulleys.

Occupational therapy should consist of functional activities designed to restore normal motion of the hand. Specific activities are also less boring to the patient since completion of a project serves as an immediate visible goal.

Corrective splints which exert continuous traction against the contracted structures and yet do not immobilize the hand should be used between exercises to maintain improved function.

Prostheses for Elderly Amputees

WILLIAM J. ERDMAN II, M.D., AND EMILIE L. MAXWELL, M.D., UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, believe that age does not ban prostheses for elderly patients with above-the-knee amputations.

Of 403 amputees, 197 responded to questionnaires. The average age was about 52 years. Around half of the amputees had arteriosclerosis with or without diabetes. The answers revealed that 193 were using prostheses. Neither cane nor crutch was required by 46%, and 70% were employed.

Analysis of results of training 400 A/K amputees. Arch. Phys. Med. 36:209-211, 1955.

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Radiation for Nonmalignant Conditions

H. DABNEY KERR, M.D.
State University of Iowa, Iowa City

*Roentgen rays and radium are valuable in treatment of nonmalignant as well as malignant conditions.**

IRRADIATION is effective therapy for *nonmalignant tumors of the pituitary gland.* Acidophilic or chromophobic adenoma may cause pressure symptoms on the optic chiasm, with bitemporal field restriction due to the size of the adenoma. The size of the sella turcica is increased almost always with chromophobic adenoma, in about half of patients with the acidophilic type, and virtually never with basophilic adenoma.

The best primary treatment for pituitary adenoma is radiation delivered through several fields about the skull. Therapy is given slowly until an estimated tumor dose of 2,500 to 3,000 r is delivered. Visual fields should be determined at weekly intervals to detect gross changes. Visual field cut may increase during treatment but does not mean that therapy should be stopped. The patient should return for evaluation and visual field determinations about two months after therapy, at which time an increase in visual defects necessitates immediate surgical removal of the tumor.

Most patients are benefited, and a good result remains permanently. If the tumor recurs, surgical removal is usually required. Hypopituitarism does not occur after irradiation.

Although *craniopharyngioma* or *suprasellar cyst* is not usually considered radiosensitive, irradiation after aspiration of the cyst may prevent reaccumulation of fluid. Injection of radioactive gold is probably the best method.

Irradiation is of value in preparing patients with *nasopharyngeal fibroma* or *sclerosing capillary hemangioma of the nasopharynx* for surgery by sclerosing and reducing the size of the lesion. Interstitial radium needles or radon seeds are used, and dosage is 4,000 to 5,000 gamma roentgens. Surgery can then be done without danger of serious hemorrhage.

Cavernous hemangioma that is increasing in size may be treated with radiation. The usual dose is 300 r. If the lesion is around the eye or in an inaccessible location, radon seeds may be implanted. *Giant-cell tumors of bone* are treated with irradiation only if surgery is ineffective or if the lesion is inaccessible. In the latter instance, 600 to 1,000 r is administered in divided doses on consecutive days.

When *keloids* are seen in the early stages, irradiation is very

*Radiation treatment of nonmalignant conditions. J. Louisiana M. Soc. 107:177-182, 1955.

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valuable. A single dose of about 800 r administered to the lesion, with protection of surrounding skin, is usually effective. If the lesion is large, dosage is reduced to about 600 r. With longstanding lesions, a small amount of radiation—300 to 400 r—may be sufficient to relieve symptoms. When a keloid is excised, irradiation of the incision with approximately 800 r will prevent further keloid formation.

With *acute bursitis,* application of 50 to 200 r may provide dramatic relief of pain. During therapy, the shoulder should not be immobilized.

Frequently, pain of *ankylosing spondylitis* of the rheumatoid type is relieved promptly by irradiation. Treatment may alter the course of the disease process as well as relieve pain. Dosage is 200 r repeated as many as five times, if necessary.

In instances of *uterine bleeding,* irradiation is justified only for climacteric bleeding or bleeding associated with fibroids at the approximate age of menopause. Before irradiation, careful pelvic examination and segmental curettage of the uterine cavity and the endocervix should be done to exclude malignant disease as the cause of bleeding. A dosage of 600 to 800 r to the ovaries is sufficient to stop menorrhagia or menometrorrhagia.

In some instances of *syringomyelia,* irradiation to the involved portion of the cord relieves symptoms and produces remissions of several months to years. The usual dose is 200 r given six times. Treatment may be repeated if symptoms recur. Usually no more than 3 courses are advisable, since cutaneous breakdown over the spine may result.

A few *inflammatory conditions,* such as thyroiditis and postoperative parotitis, are benefited more by irradiation than by chemotherapy. With thyroiditis, small doses are administered to the gland. With acute disease, 50 r is given initially to each side of the gland. If improvement is noticeable the next day, the dose is increased to 100 r. This is continued until a total of about 450 r is administered to each side of the neck. In addition to irradiation for postoperative parotitis, proper fluid balance should be maintained and the parotid gland and duct should be gently massaged toward the ductal orifice.

Low-voltage roentgen and beta rays frequently are beneficial for such *eye lesions* as some corneal ulcers, pterygia, and small hemangiomas and lymphangiomas.

¶ RADIATION-INDUCED PAROTITIS may result from radioactive-iodine therapy. Robert G. Rigler, M.D., and Paul W. Scanlon, M.D., of the Mayo Clinic and Foundation, Rochester, Minn., report that the condition occurred in a patient treated with a large dose (150 mc.) of I^{131} for metastic thyroid adrenocarcinoma after hemithyroidectomy. The unusual uptake by the salivary glands was probably due to a deficiency of susceptible thyroid tissue.

Proc. Staff Meet., Mayo Clin. 30:149-153, 1955.

The Hazards of Radiation

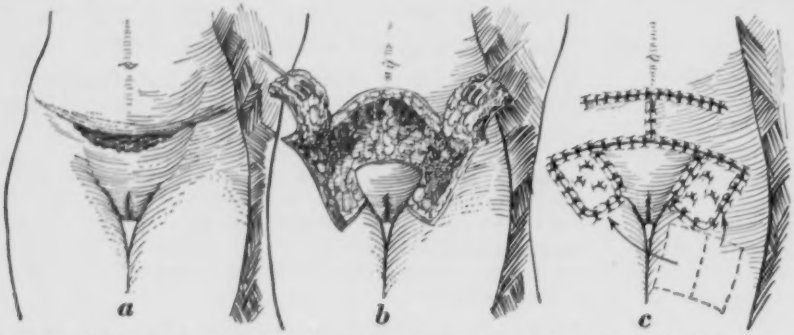
PAUL W. GREELEY, M.D.
University of Illinois, Chicago

*The increasing incidence of chronic skin lesions after exposure to roentgen or radium rays reveals the need for more judicious application of radiation.**

INDISCRIMINATE, inaccurate, or unnecessary use of roentgen or radium irradiation is often responsible for local carcinomatous degeneration and disfigurement of the skin many years after treatment. In addition, use of radiation over the epiphyses of growing children may produce serious skeletal deformities. Patients with such radiation injuries may become addicted to narcotics in an effort to relieve persistent itching or pain. Extensive plastic surgical repairs are often necessary.

Unusual susceptibility or improperly adjusted equipment may be responsible for a few radiation injuries, but one of the principal causes is the failure of one therapist to ascertain accurately how much radiation the patient may have had previously. Another potential source of difficulty is the use of postoperative radiation as a supplement to inadequate surgery.

Permanent alleviation of the pain and itching of chronic radiation dermatitis, ulceration, or neoplastic degeneration is obtained only when all the involved tissues have been excised. Postradiation skin changes include atrophy, complete vascular obliteration, and necrosis which may degenerate into squamous-cell carcinoma in over 50% of cases.



Repair of ulcerating radiation dermatitis of anterior abdominal wall: [*a*] lesion, [*b*] elevation of full-thickness skin flaps from thighs after excision of ulcer, [*c*] flaps sutured over site of excision and flap sites repaired with split-thickness skin grafts

*Hazards of radiation. Indust. Med. 24:227-229, 1955.

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1. Rukes, J. M., et al. Metabolism 3:481, 1954.
2. Peterkin, G. A. G. Brit. M. J. 1:522, 1954.

PFIZER LABORATORIES Pfizer Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

Conservative therapy is generally unsuccessful, and the tissues must be resected radically in order to reach a good blood supply. Failure to excise all of the damaged tissue leads to further breakdown and ulceration.

To avoid the disfigurement and possible danger of chronic radiation injuries, roentgen and radium therapy should not be used when surgery can completely cure the patient. Cavernous hemangiomas and basal-cell carcinomas, for example, can be treated safely by careful excision, and postoperative radiation is never necessary when surgical removal is complete. When radiation must be used to destroy a deep-lying lesion not susceptible to surgical removal, skin changes are unavoidable. The preferred treatment in such instances is employment of primary wide excision and plastic repair.

When the usual amount of radiation fails to heal superficial neoplastic lesions promptly, radiation should be abandoned immediately in favor of surgical removal.

Survey of Urolithiasis

CARL E. BURKLAND, M.D., AND MILTON ROSENBERG, M.D., STANFORD UNIVERSITY, SAN FRANCISCO, estimate that every urologist sees about 60 patients with calculi each year. Improved treatment has reduced the rate of recurrence in these patients to approximately 14%.

According to information obtained from questionnaires returned by members of the American Urological Association and by those of the Western Section who are not members of the national organization, sufficient water intake and elimination of infection and obstruction are the most effective means of preventing recurrences. Acid and alkaline ash diets; limitation of milk, phosphorus, and oxalate; and high vitamin intake are moderately helpful. Stones caused by recumbency may be prevented by early ambulation or frequent change of position. Few calculi are dissolved by irrigation but a rather large number vanish spontaneously.

Frequently no cause for stone formation can be discovered. A hot dry climate may predispose to calculi; small ureteral stones tend to form during the summer, particularly in young people in southern and southwestern parts of the United States.

The commonest type of stone is calcium phosphate, also the most likely to recur. Analysis is of value mainly for cystine and uric acid calculi.

Although many specialists never observe instances of hyperparathyroidism, 50 physicians reported 119 proved parathyroid adenomas associated with stone formation.

Survey of urolithiasis in United States. J. Urol. 73:198-207, 1955.

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Psychiatric Aspects of Arteriosclerosis

EDWARD B. ALLEN, M.D.
New York Hospital, Westchester Division, White Plains, N.Y.

*Psychologic factors as well as cerebral alterations are involved in the etiology of arteriosclerosis.**

WITH cerebral arteriosclerosis, 3 general conditions may be differentiated: [1] cerebral arteriosclerosis alone, [2] lesions with superimposed psychosis, and [3] senility brought on by slow degeneration of brain tissue rather than of blood vessels. Types frequently merge, however, and sharp distinction may be impossible. Therefore, diagnosis depends less on symptoms, which are much alike, than on combination into syndromes, time of onset, and speed of development.

Cerebral arteriosclerosis without occlusion gradually limits blood supply to the brain. The first symptoms are usually fatigue and loss of interest, noted after the age of 50 years and frequently associated with some change in the daily living pattern, such as retirement from business, financial loss, death of a relative, or a move to a different locality.

Persons with more advanced disease, who perhaps had the first episode in the thirties or forties, are intermittently psychotic. Deterioration of character and ability is sudden and may be attributed to an unexplained nervous breakdown. Stress and strain may provoke irritable, confused, delusional, suspicious, or frankly paranoid states, and sexual impulses may become erratic.

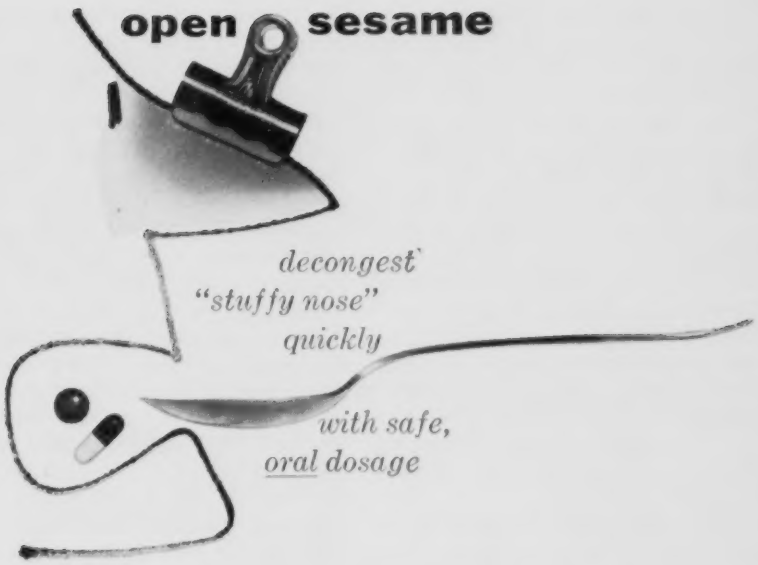
Prognosis is often better than expected. Years may elapse between thromboses of small arteries, and remunerative employment is sometimes possible. However, behavior must be watched, and psychiatric help is sometimes needed.

Psychosis with arteriosclerosis is often related to variable blood pressure and flow in cerebral vessels. Affected patients and their families are predominantly tense and aggressive, with trends toward manic depression, affective psychosis, high blood pressure, and vascular accidents.

Prodromal headache, dizziness, vague somatic symptoms, physical or mental slackening, and apoplectiform or fainting attacks are common. Psychiatric onset is typically acute, the initial symptoms being abrupt confusion in more than 50% of patients. Emotions are generally more varied and physical manifestations more pronounced than with senility alone.

Many patients who enter a psychiatric institution have been taking barbiturates, aminophylline, paral-

*The management of cerebral arteriosclerosis: psychiatric aspects. Bull. New York Acad. Med. 31:366-375, 1955.



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dehyde, or Demerol as well as low-protein, salt-free diets. As a rule, all such aids can be discontinued. Digitalis, morphine, or other drugs may be helpful to calm and quiet the patient but should be withdrawn as soon as possible.

Each person should be attended by as few nurses and physicians as practical and kept in the same place, when feasible, to reduce external stimuli. Medication is prescribed only one day at a time under constant clinical and laboratory observation. Special diets, if needed, also can be modified quickly. Adequate fluids, nourishing and easily digested meals, baths, packs, massage, and proper rest are helpful. Treatments should not be confusing, and all necessary measures are explained.

For constipation, simple cathartics such as milk of magnesia or cascara with mineral oil are employed intermittently or in decreasing amounts. Oil may be instilled and a low enema given once or twice a week, but depleting colonic irrigations are avoided.

Refractory emotional disorders may be calmed by electroshock, if the patient's cardiac reserve permits walking 100 yd. without obvious distress. Hypertension, abnormal electrocardiograms, a record of angina pectoris or coronary thrombosis, and inactive rheumatic disease with valvular damage are not contraindications.

Curare is safe when carefully administered to patients with no gross neurologic symptoms, recent cerebral hemorrhage, or other serious brain disease. True convulsions are prevented, and only isolated fibrillations that do not move the whole limb are induced.

Convalescent patients are taught to live contentedly within limitations, and families are instructed in home care. Many patients are discharged and lead fairly useful community lives. Length of illness is generally less than two years, and discharge from the hospital is usually possible within two months after admission.

Senility reflects a progressive, more or less gradual alteration in the brain tissues. Whether onset is acute or insidious, outcome is the same. Mental illness commonly lasts one to three years, and survival is less likely than with psychotic arteriosclerosis.

¶ ALLERGIC RHINITIS is usually mitigated by treatment with Vasocort, a solution of hydrocortisone and vasoconstrictors, sprayed into the nose four times a day. While associated polyps often disappear, Louis E. Silcox, M.D., of the University of Pennsylvania, Philadelphia, finds that the shrinkage may be only temporary. The drug is 20 mg. per 100 cc. solution of hydrocortisone alcohol combined with 0.5% hydroxyamphetamine and 0.125% phenylephrine hydrochloride. The free alcohol form of the drug is 28 times as soluble as the acetate.

Arch. Otolaryng. 60:431-438, 1954.

Just dirty knees . . . or a significant symptom?

Jimmy has an excuse. There's more to his grimy appearance than meets the eye.

In some children, the first sign of thyroid deficiency may be a hyperkeratosis of the elbows and knees, manifested by stubbornly dirty patches.[1] For hypothyroidism assumes many forms.

To diagnose the condition correctly, and as early as possible, more than the classical tests are often employed.

"A simple and readily available diagnostic test for borderline hypothyroidism" consists of administration of small doses of thyroid over a period of several weeks.[2]

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1. Ber, A.: Acta Endocrinol. *16*:305 (Aug.) 1954. 2. Editorial: J. Clin. Endocrinol. & Metab. *15*:148 (Jan.) 1955.

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Surgery for Laryngeal Cancer

FREDERICK A. FIGI, M.D.
Mayo Foundation, Rochester, Minn.

*Moderately advanced cancer of the larynx can be resected adequately without disturbing laryngeal function.**

Carcinoma of the larynx occurs most frequently in the sixth decade but is found in a significant number of older and younger patients. Hoarseness is the most common and earliest symptom, while pain, hemorrhage, dyspnea, and dysphagia vary in time of onset.

Careful mirror or indirect examination of the larynx and biopsy of the most suspicious areas are important measures in establishing the diagnosis. Direct laryngoscopic examination may yield additional information. If the lesion appears malignant, a biopsy report of inflammatory tissue demands further histologic study.

The likelihood of cure and the possibility of preserving laryngeal function often depend on the surgeon's experience, since many lesions can now be adequately treated with less than total laryngectomy.

Thyrotomy, laryngectomy, hemi- or partial laryngectomy, pharyngectomy, endoscopy, and irradiation can all be utilized in eradicating the tumors, but only the first 2 are recommended for most patients.

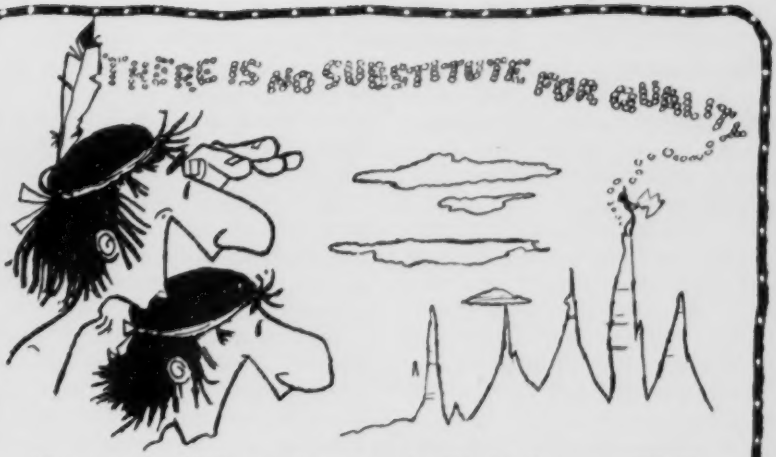
Supraglottic laryngeal carcinoma can frequently be managed better through the mouth than by an open procedure, because the lesions grow slowly and metastasize late. Removal by suspension laryngoscopy and electrocoagulation is not hazardous, postoperative reaction is slight, and functional results are satisfactory.

Laryngofissure allows excellent visualization of infiltrating glottic tumors, but pharyngotomy may be necessary to expose infiltrating supraglottic neoplasms. Exploration occasionally reveals that total laryngectomy is not necessary. If the lesion is too extensive for safe removal, laryngectomy can be performed.

Electrocoagulation is ordinarily combined with sharp dissection for wider removal and to prevent malignant cell grafting. The eschar also seems to delay or prevent the invasion of respiratory tract organisms into the opened tissues. Experienced laryngologists obtain five-year cures in 80% of cases with this method.

Laryngectomy technic is changing. When limited muscle invasion is encountered during dissection, the involved area is immediately coagulated, and wide electrosurgical excision still makes effective re-

*Carcinoma of the larynx and its present-day management. Ann. Otol., Rhin. & Laryng. 44: 136-148, 1955.



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moval feasible. If local spread is known preoperatively, the skin, subcutaneous tissue, and anterior muscles can be excised. The prognosis is poor when tumor perforation has occurred.

Postcricoid lesions may require resection of the cervical esophagus and esophageal repair with skin grafts or flaps either immediately or later. A five-year survival rate of 60% can still be achieved.

Palpable unilateral cervical adenopathy necessitates total laryngectomy and unilateral radical neck dissection. Radiation therapy is done when surgery is inadvisable.

Hemilaryngectomy or partial laryngectomy with skin grafting at the time permits more extensive local excision without voice destruction or airway disruption. A radical laryngofissure is done with removal of much of the thyroid cartilage on the involved side, and up to half the opposite ala, if necessary. Usually, a narrow strip of the inferior or superior cartilaginous border can be left for support. About half the anterolateral or anterior part of the cricoid cartilage is excised, if required.

The trachea is opened and packed, and involved soft tissues and overlying cartilage are removed en bloc. Frozen sections are made immediately.

A hair-free, dermatome graft around a sponge rubber stent is then immobilized in the laryngeal defect before closure. The stent is removed ten days postoperatively by suspension laryngoscopy and a sponge rubber dilator is inserted. The dilator is removed ten to twenty-one days later, and the tracheal cannula is taken out a day or two after that.

The graft gradually becomes softer, more pliable, and moist. The voice is hoarse with poor resonance, but the airway is adequate. Only 1 recurrence was noted in 30 cases.

Management of Choking Accidents

LAWRENCE R. BOIES, M.D., MINNEAPOLIS, reports that choking accidents in children may be managed by a layman if the child is turned upside down and slapped on the back or if gagging and vomiting are instigated by placing a finger down the throat of the child.

If such measures do not bring relief, a physician must be called and an emergency tracheotomy done. Sometimes the physician must be prepared to perform the operation with makeshift instruments. The trachea is opened by a vertical incision through the first 2 rings or by a horizontal slit through the membrane below the first ring. In some instances, the cricothyroid membrane must be opened to establish an airway before an orderly tracheotomy can be performed.

Choking accidents. Minnesota Med. 38:235-236, 1955.

Causes of Hand Dermatitis

JAMES J. JAMBOR, M.D., AND RAYMOND R. SUSKIND, M.D.
University of Cincinnati

*Commercial soaps and detergents are often blamed unjustly for eczema and other skin diseases of the hands.**

ALTHOUGH commercial soaps and synthetic detergents are frequently implicated as causes of eczematous dermatitis, numerous other factors may be responsible. Environmental conditions, such as heat, cold, and solar radiation, and mechanical factors, such as friction, may produce the inflammation. Other components include dietary deficiencies, metabolic disturbances, and blood dyscrasias.

In an effort to determine the role of cleansing agents in hand dermatitis, a study was made of allergic qualities and irritant properties in 79 cases.

Suspected soaps and detergents were tested as possible sensitizers in 57 subjects. More than half were housewives. Lesions that appeared included interdigital scaling, erythema, and maceration; classic vesicles of hands; massive edema with erythema; nummular eczematous patches on all extremities; and erythema of palms and dorsa with or without scales and fissures. Many individuals also had generalized papulovesicular eruptions that occurred after onset of hand lesions.

The prior course of illness was thoroughly reviewed. Patch tests were made with all available personal, occupational, household, and hobby contactants; with 42 common substances; and with fresh solutions of 9 soaps and detergents representing all available types.

Investigation also included usage tests with the most likely agents, bacteriologic and mycologic examinations, hemograms, and urinalyses. However, no specific reactions to soaps or detergents were elicited.

Atopic dermatitis, hay fever, or asthma was observed in 8 instances, hyperhidrosis in 6, seborrheic dermatitis in 2, ichthyosis in 1, provocative stress and tension in 11, nutritional deficiency in 4, and pyogenic bacterial infection in 4.

Other factors were blue printing ink, cologne, rubber gloves and girdle, *Monilia albicans*, shampoo and nickel, *Rhus toxicodendron*, hand lotion, p-phenylenediamine, chromate employed in tanning, shoe leather, phenolphthalein, yellow and orange dyes on citrus fruit, kerosene and xylene, lathe coolant, and lanolin.

Soaps and detergents were tested as primary irritants in 22 further cases, all involving symmetric der-

(Continued on page 156)

*An etiologic appraisal of hand dermatitis. I. The role of soap and detergents as sensitizers. II. The role of soaps and detergents as primary irritants. J. Invest. Dermat. 24:379-396, 1955.

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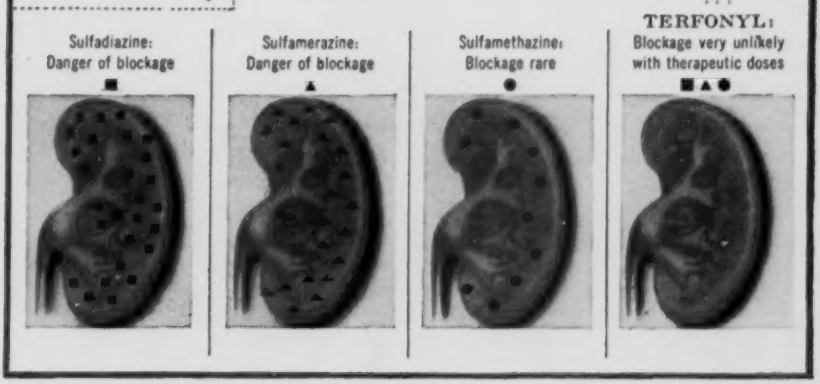

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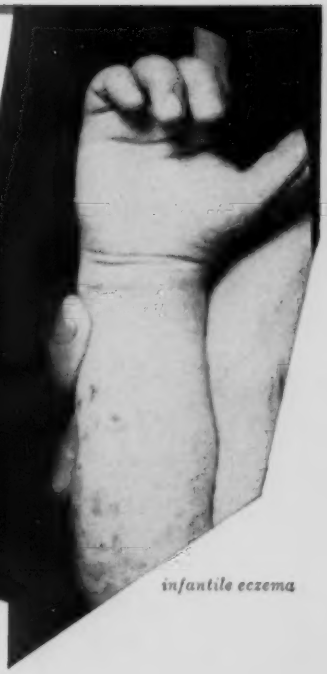

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*". . . secondary infection with pustulation often follow scratching which is induced by the intense itching." Nelson, W. E.: Textbook of Pediatrics, ed. 5, Philadelphia, W. B. Saunders Company, 1950, p. 1516.

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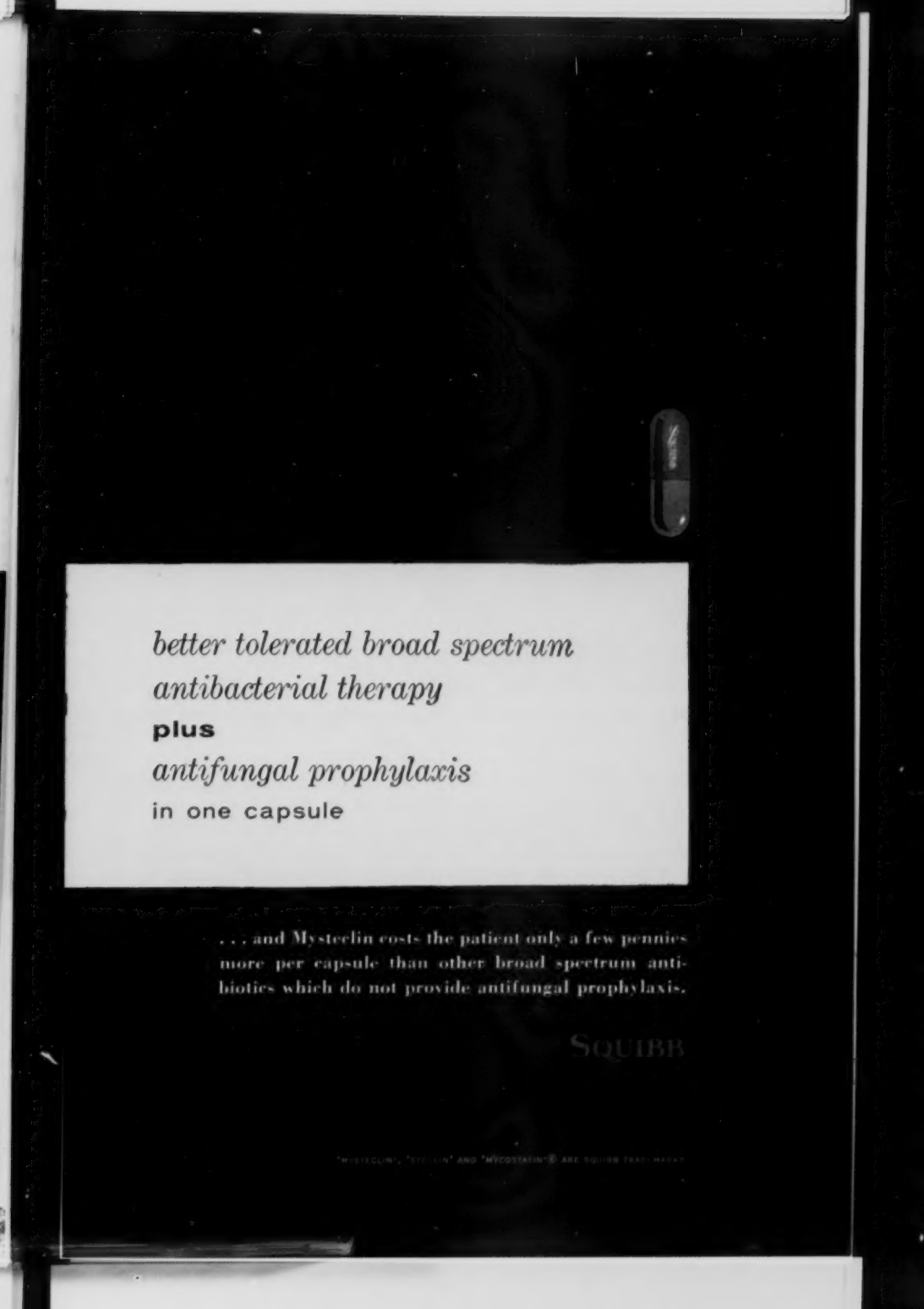
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matitis on both hands. All subjects were hospitalized for observation, and procedures employed for the first group were repeated.

In addition, the right hand was soaked in a 0.5% solution of soap or detergent for half an hour on four successive days, while the left hand was immersed in tap water of the same temperature.

At intervals during the next twenty-four hours, hands were compared under a microscope. Skin surfaces were examined with the Beckman Calomel-electrode *p*H meter, photographed in color, and observed with an erythrometer. The only visible irritation from immersion was slight and occurred on both of the hands of a single subject.

Among the final diagnoses were psoriasis with menopausal hyperhidrosis, avitaminosis A with contact dermatitis from hand lotion, hypersensitivity to chrome-tanned leather and hexavalent chromate, hypersensitivity to cutting oil, lupus erythematosus and contact dermatitis from sulfur ointment, oil folliculitis and turpentine burn, erosio interdigitalis blastomycetica, neurotic excoriations with secondary infection, stasis dermatitis with ids, mycosis fungoides, infected burns from undiluted bleach, contact dermatitis from tomato plant, hyperhidrosis and recurrent vesicular eruption of palms and soles, chronic pyoderma, tinea pedis with ids, atopic dermatitis, and hypersensitivity to nickel.

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GIBSON E. CRAIG, M.D., MONTREAL, believes some diseases of the bearded area of the face may be caused by shaving against the grain.

If a man obtains a close shave by moving the razor against the grain while the skin is stretched to flatten the follicle mounds, the cut end of the hair may be below the surface of the skin when traction is released. In growing back, the hair tip may cause a foreign body reaction or infection, enter the follicular epidermis and become ingrown, or penetrate the outer layers of the epidermis for about ¼ in. The theory would explain why folliculitis of the beard is localized and does not spread and also why some men get folliculitis only after being shaved in all directions by a barber or with an electric razor.

A patient with folliculitis should omit shaving until hair projects above the surface and infected and ingrown hairs can be epilated. Warm compresses are applied to promote drainage and allow release of hair by softening the epidermis, and infection is controlled with Vioform. When beard is long enough, grain direction can be determined.

Shaving. Arch. Dermat. 71:11-13, 1955.

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1. Vernon, S.: Nutritional Deficiency, Clin. Med., Oct., 1950.

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ROBERT S. SMITH, M.D.
St. Luke's Hospital, Boise, Idaho

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THE preparation of skin grafts has been greatly simplified by mechanical refinements. As a result, the general surgeon is able to employ skin transplants for a large number of defects requiring functional reconstruction.

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Some limited burns may be resected and grafted immediately. With large third-degree burns, however, two to three weeks' time is required for demarcation between living and devitalized tissue. The extent of slough is then obvious, and the area should be debrided under general anesthesia. Raw areas are covered with fine mesh gauze that is impregnated with Vaseline and pressure dressings are applied. Granulation tissue rapidly covers the area, providing a bed for skin grafting.

Thin skin grafts, 0.008 to 0.01 in. thick, are stable and function well on the trunk and plane surfaces of the extremities, but thick split-thickness or full-thickness grafts are desirable to resist secondary contracture in such areas as the front of the neck, axillae, palms of the hands, and eyelids.

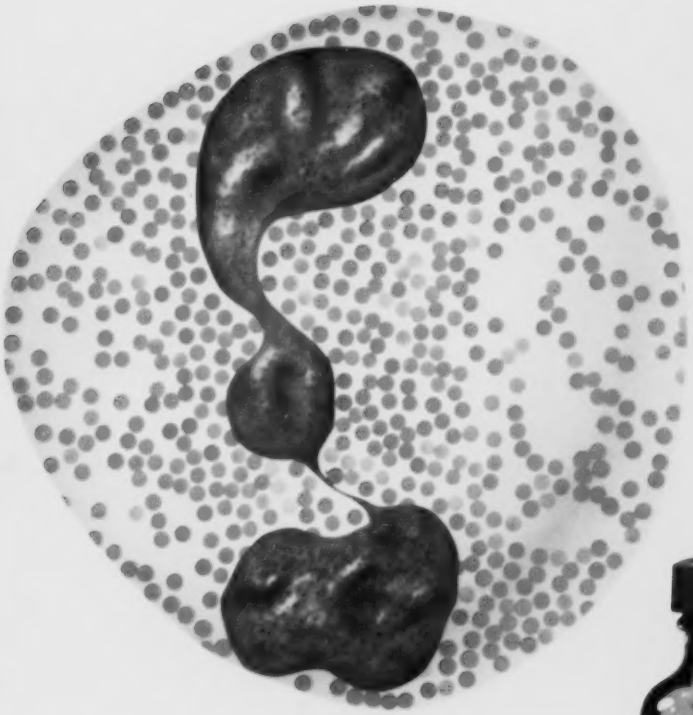
When available donor skin is limited, greater areas may be covered by cutting the skin grafts into postage stamp sizes and scattering them over the surfaces of the wound. Epithelial growth proliferates from the edges of the skin and bridges the gaps. These grafts are not sutured.

Furacin ointment applied on fine mesh gauze does not macerate the grafts and tends to inhibit local growth of bacteria. Infection is controlled by dressings moistened with saline solution. Capillary oozing after wide excision of an old scar or keloid is stopped by pressure dressings. Management of old burns with chronic ulcers requires a combination of excision, skin grafting, and plastic surgery procedures such as Z-plasties and pedicle flaps.

Special problems are posed by patients with burns of the face and hands. Scarring of the skin impairs function of the hands, but adequate excision of the scars and replacement with thick split-thickness or full-thickness skin aids restoration of function.

The best cosmetic results in making grafts to the face are obtained when the donor skin is taken from the supraclavicular or postauricular areas.

*Versatility of the free skin transplant. West. J. Surg. 63:107-115, 1955.



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Plastic surgical procedures for correction of congenital defects and formation of tubes and pedicle grafts often require skin grafting. Traumatic injuries encountered in industry and in the home resulting in avulsion of tissues also frequently necessitate skin transplantation. Surgery for cancer may demand wide skin excision and when primary suture closure is not possible, grafting is done.

Chronic ulceration in the legs resulting from diseases of the venous or arterial system may be managed by excision of the ulcer and skin grafting. When arterial insufficiency is responsible for the ulcer, however, skin grafting is likely to fail since the health of the surrounding tissues is poor. Sympathectomy before grafting may improve the circulation in the extremities.

Full-thickness skin grafts may be employed for covering defects in ventral and inguinal hernias. The grafts are placed in the defect under considerable tension and sutured with nonabsorbable sutures. Tension in the grafts will cause atrophy of the glandular structures in the skin. Implanted skin tends to undergo desquamation with formation of fluid in the operative site. These serous collections are usually transient and should not be confused with infection.

Skin grafts survive equally well when placed on fat, fascia, muscle, periosteum, or tendon sheath. When skin is to be placed over denuded bone, the cortex must be drilled or excised to permit granulation tissue to grow from the marrow cavity before grafting is attempted. For decubitus ulcers, pedicle graft is the preferred treatment, but in selected cases free skin grafting may be performed.

Cerebral Thrombosis in Young Adults

LOUIS BERLIN, M.D., BERNARD TUMARKIN, M.D., AND HERBERT L. MARTIN, M.D., VETERANS ADMINISTRATION HOSPITAL, BRONX, AND BELLEVUE HOSPITAL, NEW YORK CITY, report that sudden apoplectic onset of focal neurologic signs without other evidence of neurologic or systemic disease may occur in young adults. Symptoms and signs are identical to those of cerebral thrombosis in older persons.

The most common manifestation of the condition is hemiplegia, although states of mental clouding, somnolence, aphasia, diplopia, and convulsive seizures are also noted. Diagnostic procedures fail to give any evidence of hemorrhage, emboli, hypertension, neoplasm, diabetes, blood dyscrasias, congenital aneurysm, or other vascular anomalies.

The prognosis is good in most patients. Progressive improvement is usual, although residual hemiparetic defects persist.

Cerebral thrombosis in young adults. New England J. Med. 252:162-166, 1955.

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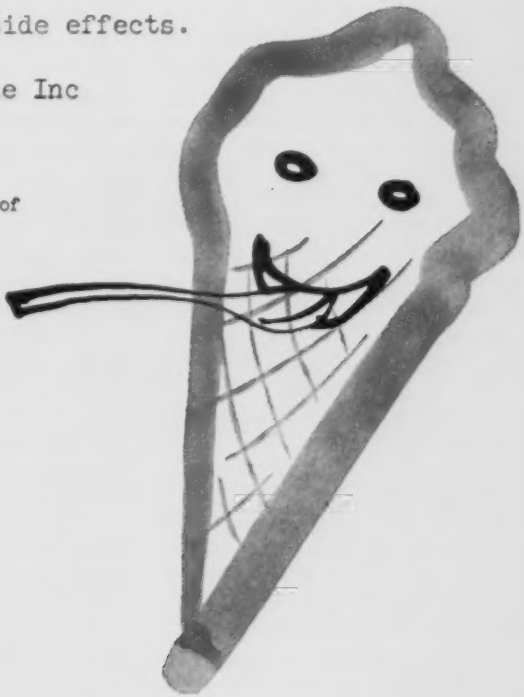

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The Meaning of Anxiety

FRANCIS J. BRACELAND, M.D.*
Institute of Living, Hartford, Conn.

ESTIMATES vary regarding the number of so-called "functional cases" the general physician encounters. Some estimates go as high as 50%, but it is probable that, no matter how high this psychiatric contingent goes, more than half will be anxiety states. Anxiety may masquerade under several guises and mimic and add to the physical symptoms of many illnesses. The doctor in general practice should be in a position to diagnose and handle the condition, either by treating the patient or by referring him to a specialist.

Anxiety is a condition of heightened tension usually accompanied by a feeling of diffuse apprehension. In psychiatry, anxiety is viewed as a basic component of affective life. Possibly, it is the original response of an immature, helpless organism to a potentially threatening situation. Anxiety is a fear-equivalent, but the danger that it signals is not necessarily concrete or objective. It usually tends to be a threat to the security and values of the personality and has the qualities of protractedness and insuperability.

Like fear, anxiety is associated with physiologic changes preparing the individual for emergency action. Since the threat that evokes it is prolonged in time, these protective physiologic responses may operate more or less continuously, causing slight or severe somatic dysfunction and, in some instances, changes in somatic structure.

Anxiety occurs in different constellations ranging from the normal to the psychotic. No matter what the constellation, however, frustration, dissatisfaction, insecurity, hostility, guilt, and interpersonal conflict are powerful agents. The most disabling type of anxiety arises from within the personality. Any instinctive desire or impulse which, if granted, would threaten security in an interpersonal world is perceived by the personality as a danger that should be repressed. If the repression is complete, all is well. If it is only partially successful, the threat becomes manifest in neurotic or psychotic symptoms.

Anxiety in normal individuals is proportionate to a threat of which the individual is consciously aware, and no repression or intrapsychic conflict is involved. There is, however, an element of doubt as to what the outcome will be and

*Medical Director and Psychiatrist-in-Chief, Institute of Living, Hartford, Conn.

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1. Cass, L. J. and Frederik, W. S.: Malt Soup Extract as a Bowel Content Modifier in Geriatric Constipation. Journal-Lancet, 73:414 (Oct.) 1953.

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whether or not effective action can be taken. As a rule, the anxiety-creating situation involves social, financial, educational, vocational, or family and marital difficulties. The more immature the individual, the greater the tendency to anxiety. The more physically depleted the person, the more anxious he tends to become. Anxiety is often associated with or symptomatic of bodily disease, toxic conditions, or organic brain changes.

From the psychiatrist's point of view, anxiety is pathologic when it occurs repeatedly in inappropriate situations, in reactions to inadequate stimuli, and in response to unconscious factors. In some instances, anxiety is involved in situational difficulties of which the person is more or less aware but which stem from a conflict between external factors and the personality. When the anxiety is on a deeper level, neurotic symptoms become more disabling. Finally, there are patients in whom anxiety wreaks such havoc that it can be handled only by an outbreak of psychotic symptoms.

The capacity to handle anxiety and tension varies from individual to individual and has much to do with conditioning. It is believed that the syndrome of primary anxiety is delineated early in life and is shaded and modified by subsequent experience. The helplessness and dependence of the human infant make him deeply insecure. When his needs are unsatisfied or

when trauma or pain occurs, he responds with a flood of anxiety.

In adults, a sense of helplessness may reactivate this early, primary distress pattern. Because of insecurity, the infant becomes anxious when there is any threat of separation from the object on which he is dependent. As dependence decreases, so do insecurity and proneness to anxiety. Often, the individual never becomes completely emancipated, and separation or threat of separation from important objects, past or present, continues as a major source of anxiety.

The child is keenly aware of emotional threats in his environment and also of any currents of indifference, resentment, or hate in people important to his security. In addition, anxiety is quickly communicated from significant adults to the child. Such communication continues to operate in adulthood, particularly in insecure people. Another avenue to anxiety in the child is the experience of disapproval. Any possibility of loss of love and consequent rejection is a major threat to his security, and the child is impelled to alter his unacceptable behavior. This whole process is of great importance for conscience formation and for the inculcation of values and goals, realistic and unrealistic, that determine later striving.

Important also in personality formation of the child is the complex of frustration, anger, hostility, aggression, and guilt aroused in his

dealings with significant people. Because it is equated with possible loss of control and inevitable retaliation, this complex is anxiety-producing. Its force carries over strongly in later years and has a powerful impact on interpersonal relationships. Finally, physical threats in the shape of general environmental hazards, internal discomforts, and external abuse and punishment constitute a major source of anxiety in childhood and maintain their force throughout life.

So it is that circumstances which recall in some way an anxiety-evoking constellation in early life are later particularly productive of anxiety. The anxiety which is an integral part of man's human endowment is magnified by the complex society in which he lives. Insecurity is common in modern life, and fear of the future is universal. As the tempo of life increases, environmental pressures are also compounded.

In each individual, the factors that make for stress seem to follow a definite pattern. In many people, anxiety is a lifelong reaction to all sorts of everyday problems. They learn to live with it for the most part, but, when unusual pressures arise, chronic anxiety may assume a virulent form. Because of a combination of adverse constitutional and conditioning factors, some individuals are disabled by a small amount of stress. No matter what the make-up of the individual, however, there are always limits to his tolerance, and, when these are exceeded, a psychologic crisis occurs. Anxiety lurks in the nucleus of every emotional disorder, and its corroding effects are visible at all levels of psychopathology.

Because of the unpleasant affective tone of anxiety and its distressing physical reverberations, each individual develops certain defense patterns designed to minimize the experience. These defense patterns may be based on one or more of the following so-called mechanisms: compensation, sublimation, denial, repression, rationalization, displacement, projection, fantasy, and reaction formation. Other defenses are also widely used. Defense patterns often lead to personality traits of considerable value but sometimes may cripple the personality. When they fail to maintain a balance between instinctive drives and personality values, anxiety emerges, signaling to the ego a threat to its integrity.

Anxiety is a total phenomenon, affecting the whole individual. The tendency of anxiety to intensify the symptoms of a physical disease needs no reemphasis for physicians. That anxiety may incapacitate the patient more than the disease itself is a daily observation in general practice. It is always part of the doctor's job to determine how much of the patient's distress is due to anxiety and how much to the organic condition that actually exists. Treatment has to be guided by this assessment.

Anxiety states proper may be seen by the doctor at an early stage of development or at a chronic stage. When anxiety arises from within the personality, the patient

(Continued on page 173)

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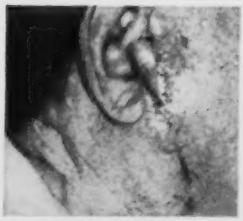

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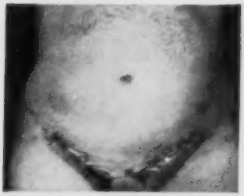

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1. Rigler, S. P. and Adams, W. E.: Experience with a new sprayable plastic as a dressing for operative wounds. Surg. 36:792 (Oct.) 1954. (University of Chicago Clinics, Chicago, Surgical Service).

2. Choy, D. S. J.: Clinical trials of a new plastic dressing for burns and surgical wounds, Arch. Surg. 68:33 (Jan.) 1954. (Bellevue Hospital, New York, Third Surgical Division—Dr. John Mulholland, chief).

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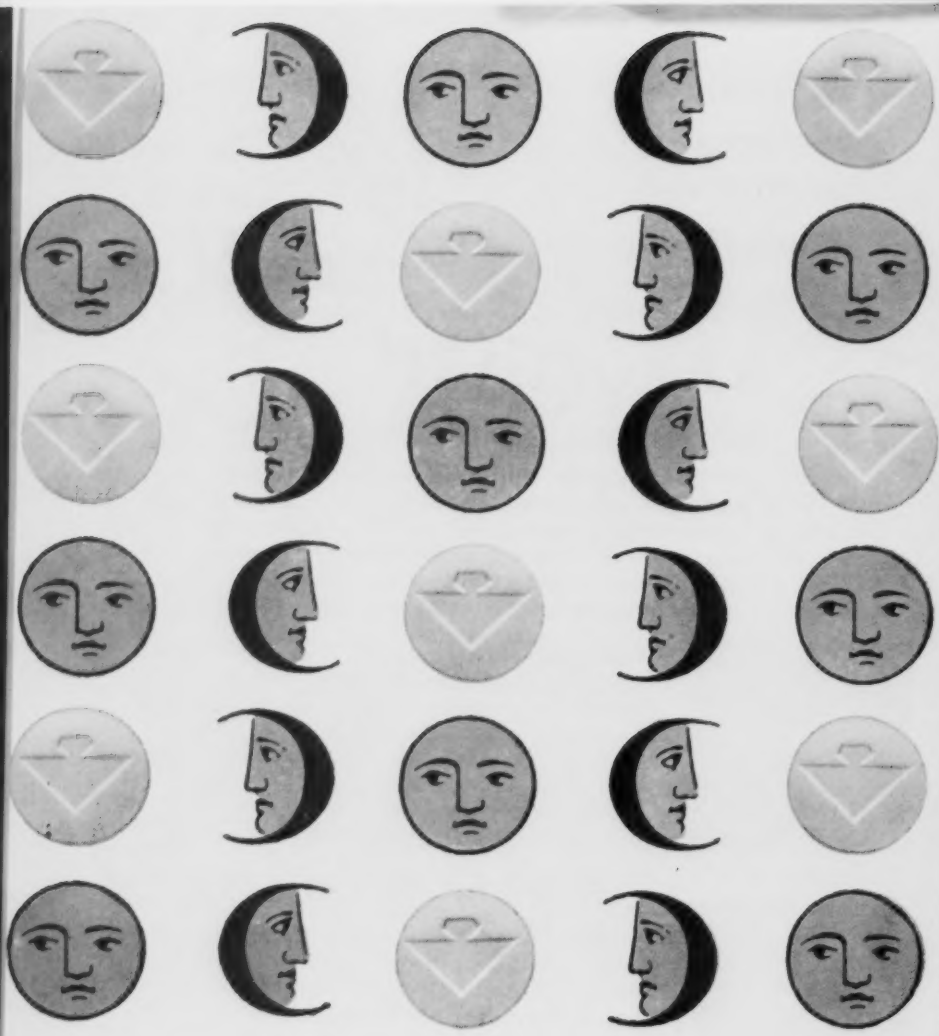

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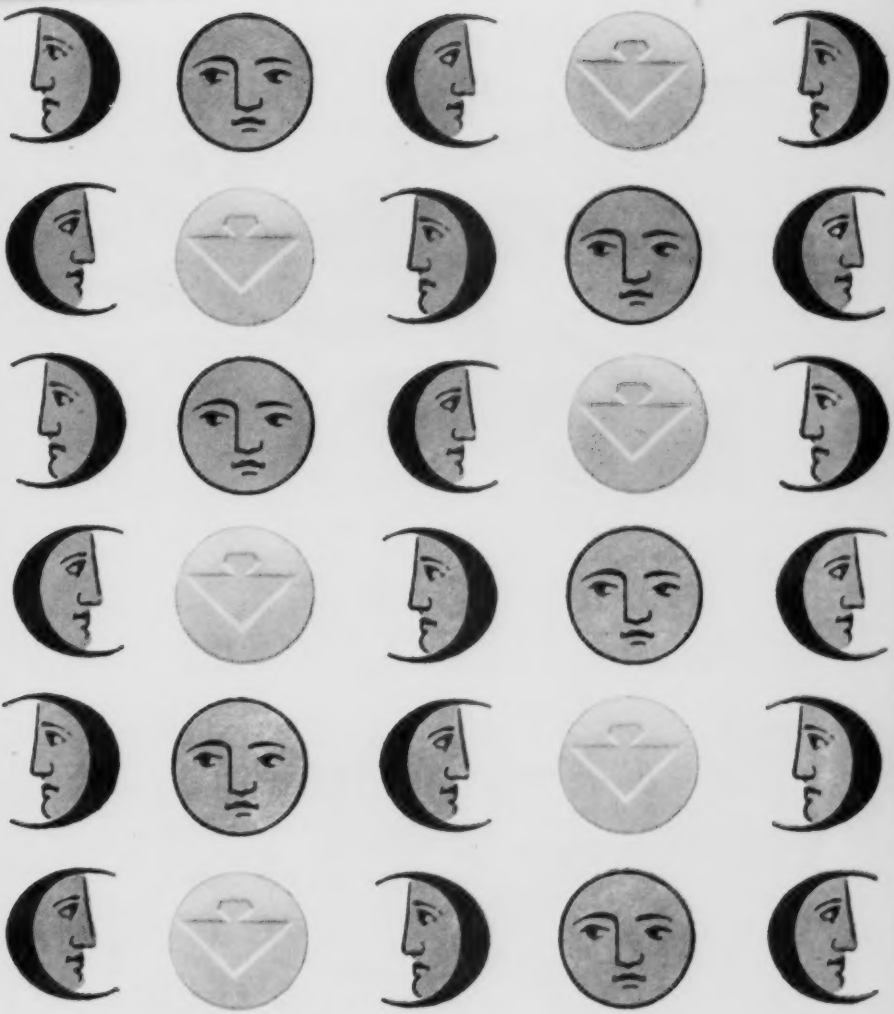

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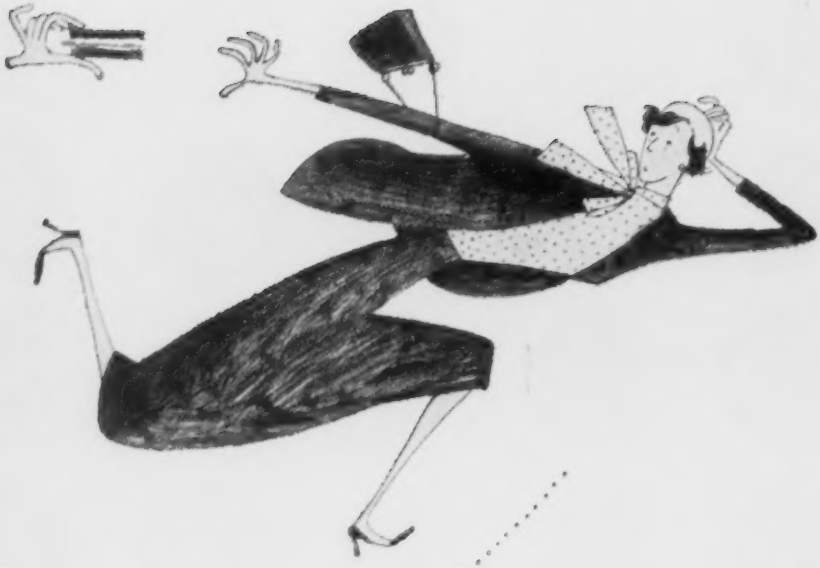

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may be unable to explain his symptoms except in terms of physical disease. This is not surprising. Anxiety characteristically produces alarming symptoms of physiologic dysfunction—respiratory difficulties, precordial discomfort, palpitation of the heart, vertigo, perspiration, weakness, gastrointestinal disturbances, muscular pain, and headache.

If the patient with these symptoms is skillfully questioned, he usually betrays certain fears. Though these may cover a very wide range, they often revolve around some indescribable internal danger, apprehension of something intolerable about to happen, fears of mental disintegration, or fears of physical annihilation. Many times, the appearance of the patient is suggestive. He has a tense, restless, uneasy look. Examination reveals cold, moist extremities, dry mouth and lips, variable pulse rate and blood pressure, and, often, hyperkinetic heart sounds. The abdomen may be spastic, the colon tender, and muscle tendon reflexes brisk to hyperactive.

In the early stages of reaction, the anxiety is free. The patient is tense, restless, irritable, easily fatigued, and harried by insomnia. He may find his memory faulty, his powers of concentration impaired, and his ability to make decisions weakened. As anxiety increases, these symptoms intensify and the physiologic component becomes more prominent, though symptoms continue to be rather vague and migrant. When the free anxiety

crystallizes, it may be concentrated on some organ or system of the body or it may take shape in neurotic symptomatology. Thus, in addition to organic fixations, gastrointestinal disorders, cardiovascular disturbances, and the like, there may be one or more of the following expressions: phobic symptoms, compulsive behavior (obsessional and addictive), depression, hypochondriasis, and hysteria. The latter occurs particularly when circumstances favor an escape into invalidism.

Although the picture is complex in many instances and there are many composite expressions, states of anxiety as seen by the general practitioner tend to fall into 5 large groups: [1] In about 15%, the anxiety is free when the patient seeks medical help; [2] in 30%, the major symptom is slight or severe somatic dysfunction, [3] in 20%, the symptoms are of the depressive variety, [4] in 15%, phobias predominate, and [5] about 15% occur in children in the form of behavior disorders, mannerisms, and tics. In a great many patients, the anxiety is well disguised. This is particularly true of patients with marked somatic overtones and of some depressed patients in whom physiologic disturbances completely hide the affective disturbance.

In approaching the problem of differential diagnosis, the examiner may be alerted to the presence of anxiety by certain considerations. Patients with anxiety dislike crowds, new and unfamiliar situations, tension, and struggle. Since these things fatigue them quickly, they prefer to remain in the familiar groove with people—preferably a few or even one person—whom they know well. They show a loss of general effectiveness; impairment in memory, concentration, sleep, and appetite; and other anomalies.

The history of the patient is of great importance in ascertaining the circumstances in which the symptoms began and in obtaining leads to the underlying problem. *It is important to recognize that anxiety symptoms have a purpose.* They serve to control an intolerable threat to the personality. Not infrequently, they permit the patient to curtail his activities, thus keeping him away from places, situations, and relationships that arouse anxiety.

It is of utmost importance to examine these patients thoroughly. Physical examination must never be perfunctory when the patient first comes to the doctor. Unlike most patients with real organic diseases, persons with anxiety states are extremely difficult to convince that symptoms are not dangerous. They tend to view their distress as a portent of disaster, and reassurance on the basis of flimsy evidence will only increase their anxiety and symptoms.

The doctor should make a point to communicate the findings of the physical examination in direct, intelligible terms. He should then explain clearly why the patient has the symptoms. It is not good medical practice to state: "There is *nothing* wrong with you." Such a statement is both irritating to the patient and contrary to fact. There

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is something wrong, and the distress is real and oppressive.

The patient should receive an explanation of the ways in which anxiety can produce somatic overreaction; disturb cardiovascular and vasomotor systems and alimentary, bowel, and sexual functions; and cause tension headache and numerous aches, pains, and disabilities. He should understand that constant preoccupation with a symptom increases its distressing tone and compounds the anxiety that gave rise to it in the first place. Further, he must be informed that incessant rumination impairs mental efficiency, the loss of which is most disturbing to the patient.

Through explanation and reassurance, the average doctor can bring relief to many people suffering with anxiety. This is particularly true in the early anxiety states. Psychotherapy on a conscious level, or face-to-face discussion, is indicated and is based on sympathetic understanding and readiness to listen. Encouraging the patient to ventilate his problems often relieves an early anxiety state. Attention should be paid to the personality and to the attitudes and situations that cause frustration and tension.

The process involves seeing the patient against the background of his environment and the effect of the environment on the patient. The meaning of symptoms, the effect of past experiences on present attitudes, and habits of thinking and feeling should be scrutinized and

communicated. Orientation should proceed at a pace suited to the individual and should dwell on the broader aspects of the problem before proceeding to details. Demonstration of a temporal connection between the onset of anxiety and certain life occurrences may provide some insight and relief.

The patient should be encouraged to look at his problems as objectively as possible and to face himself honestly and openly. This may provide a means of changing his reactions to unalterable circumstances. It is important that the patient see the necessity for adjusting to his limitations lest he continue to struggle against insuperable odds. Cultivating the patient's ability to look at things objectively is a better policy than mere suggestion, sedation, or authoritarian advice, however effective any of these may be for a time. The underlying purpose of therapy is to restore the patient's self-confidence and to make him stand on his own feet. This has to be done in a permissive, supporting, reassuring climate in which the patient can unfold his troubles and understand what is wrong. Once this is accomplished, he often can find his own way out.

In determining which patients he can treat most advantageously, the doctor should be guided by the etiologic factors. Anxiety states fall into 2 large categories: [1] those produced by internal conflict, at least partly unconscious, and [2] those precipitated by some factor

in the environment recognized by the patient but beyond his powers of adjustment.

In the first group, psychotherapy of a deep variety may be required. This means referral to a specialist, for deep psychotherapy is a skilled, time-consuming technic. In some instances, however, the doctor who knows the patient well may be able to determine the source of conflict or help the patient discover it. In the second group, the doctor may be able to do excellent work. The crucial point in handling these patients is to recognize that, while the specific situations that produce anxiety may be unchangeable, attitudes toward them are not.

The work and recreation of an anxious patient are of great importance. If the doctor understands personality make-up and defenses, he may be able to detect anxiety-provoking factors in the particular job the patient does. Jobs associated with insecurity and uncertainty, heavy responsibility, time limitations, and the like may be very disturbing to the anxiety-prone individual. Many anxious persons never can relax and keep driving themselves in a vain effort to achieve their goals. It is necessary to help such people find ways of relaxation that will promote health and relieve tension. For those who have curtailed activities because of distressing symptoms, a gradual increase in work and appropriate exercise should be prescribed.

Since sleep increases tolerance for the strain and stress of everyday life, the doctor should do what he can to relieve the patient's insomnia. Sedatives are useful at times, but their value is temporary as they obviously change neither an underlying nor a situational conflict. Therefore, sedatives are justified only to tone down anxiety symptoms until a real solution can be found. Barbiturates are used widely for this purpose and are excellent relaxants. When given in small doses, barbiturates do much to lessen anxiety during therapy and to ensure a good night's sleep.

Gastrointestinal symptoms may need to be controlled by an antispasmodic before psychotherapy can be effective. Reduction of sweating, hyperperistalsis, and jitteriness may be advantageous, and coffee and other stimulants are contraindicated in some patients. The use of an agent to control heart arrhythmias and reduce heart consciousness is occasionally advisable, and the same is true of numerous other auxiliaries that provide symptomatic relief.

Recent experiences with chlorpromazine suggest that this drug may be a useful adjuvant in the therapy of anxiety states, since it reduces sympathetic activity in addition to being a central nervous system depressant. The drug may produce side effects, however, and should be used judiciously. In some patients, particularly in elderly hypertensives, extracts of *Rauwolfia* help to relieve tension and anxiety. Finally, physiotherapy in the form of muscle exercises, general diathermy, and massage is among the adjuvant technics of greatest benefit to the tense and anxious patient.

An anxiety state that has per-

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sisted long enough tends to become intractable. Hence, the earlier an anxiety state is attacked, the better the prognosis. If the physician is unable to handle the condition, he should refer the patient to a consultant who may be able to give leads for therapy or who will see that the patient gets the proper attention. Many neglected patients become confirmed hypochondriacs, returning to the physician time after time or wandering from one physician to another.

Smoking Habits of Physicians

LEONID S. SNEGIREFF, M.D., AND OLIVE M. LOMBARD, M.S., HARVARD UNIVERSITY, BOSTON, report that the tendency in physicians is toward less cigaret smoking. One explanation is the growing interest in the possible relationship between cigaret smoking and lung cancer.

Smoking habits of 4,171 physicians were studied. The types of practice were combined into 3 main groups on the basis of the percentage of nonsmokers. Group 1 comprised specialties with rates for not smoking that were above the average for all types (33.5%) and included physicians specializing in preventive medicine and public health, thoracic surgery, dermatology, neurosurgery, orthopedics, pediatrics, ophthalmology, pathology, otolaryngology, research and teaching, urology, internal medicine, physical medicine, radiology, and chest diseases.

Group 2 included the general practitioners, whose rates for nonsmoking were close to the average. Group 3 was comprised of specialists in anesthesiology, industrial medicine, administration, general surgery, neurology and psychiatry, gynecology and obstetrics, ophthalmology and otolaryngology, and proctology. Rates for nonsmoking were below the average in this group.

The percentage of physicians who had never smoked, had stopped smoking, or were light smokers was significantly higher in group 1 than in either group 2 or 3. The percentage of physicians smoking cigarets was lowest in group 1 and highest in group 3.

Among physicians who smoked, a significantly higher proportion of those in group 1 accepted the possible relationship between cigaret smoking and lung cancer than did those in groups 2 and 3.

Physicians tended to give different advice to heavy cigaret smokers; 55% of group 1, 64% of group 2, and 63% of group 3 advised reduction in cigaret smoking, and 36% of group 1, 34% of group 2, and 28% of group 3 recommended that heavy users stop smoking entirely.

Comparative study of smoking habits of physicians. New England J. Med. 252:691-696, 1955.

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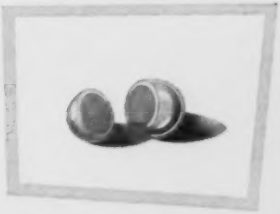

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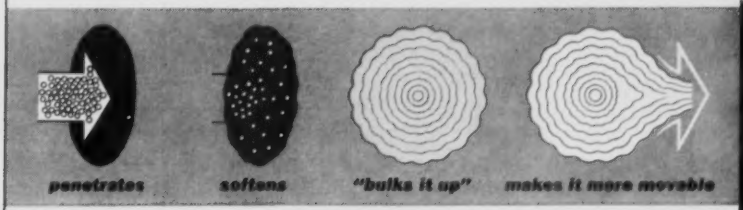

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Legal Aspects of Obstetric Practice

LOUIS J. REGAN, M.D.
College of Medical Evangelists, Los Angeles

*The incidence of malpractice claims and suits has increased more than tenfold in the past quarter century.**

In undertaking medical care of a patient, a physician incurs certain legal obligations as well.

The percentage of malpractice cases arising out of obstetric care has remained steadily at 6 to 8% of the total claims. Most important among the allegations are:

- Negligence because portions of placenta or membranes have been retained.
- Erroneous diagnosis of pregnancy as tumor or pelvic tumor as pregnancy.
- Failure of the physician to be in attendance at delivery.
- Unnecessary cesarean section or failure to perform or delay in performing indicated operation.
- Trauma to mother or infant in delivery because of negligence or lack of skill.
- Unsuccessful contraceptive salpingectomy resulting in pregnancy.
- Failure to make the diagnosis of tubal pregnancy before rupture. If even slight doubt exists, consultation and close observation are advisable.

Other claims made are that the wrong baby was received, that undetected Rh incompatibility caused difficulty, and that an unauthorized lay person was allowed to observe delivery. On the latter point, the obstetric attendant has no legal or ethical defense.

Before performing therapeutic abortion, the physician should call in reputable consultants and obtain a concurrence of medical opinion on the necessity of the procedure in order to preserve the life of the woman.

Because of the uncertain legal status of artificial insemination, a number of precautions are advisable to protect the physician from later lawsuits:

- The sterility of the husband should be positively established.
- The identity of the donor should be concealed from the recipient and that of the recipient from the donor.
- Written authorization must be obtained from the donor and his wife.
- The consent and authorization of the recipient patient and her husband must be given in writing.
- When possible, a pooled specimen of husband's and donor's semen should be employed.
- The physician who does the artificial insemination should never become the obstetrician for the recipient.

*Legal aspects of obstetric practice. Obst. & Gynec. 5:613-616, 1955.

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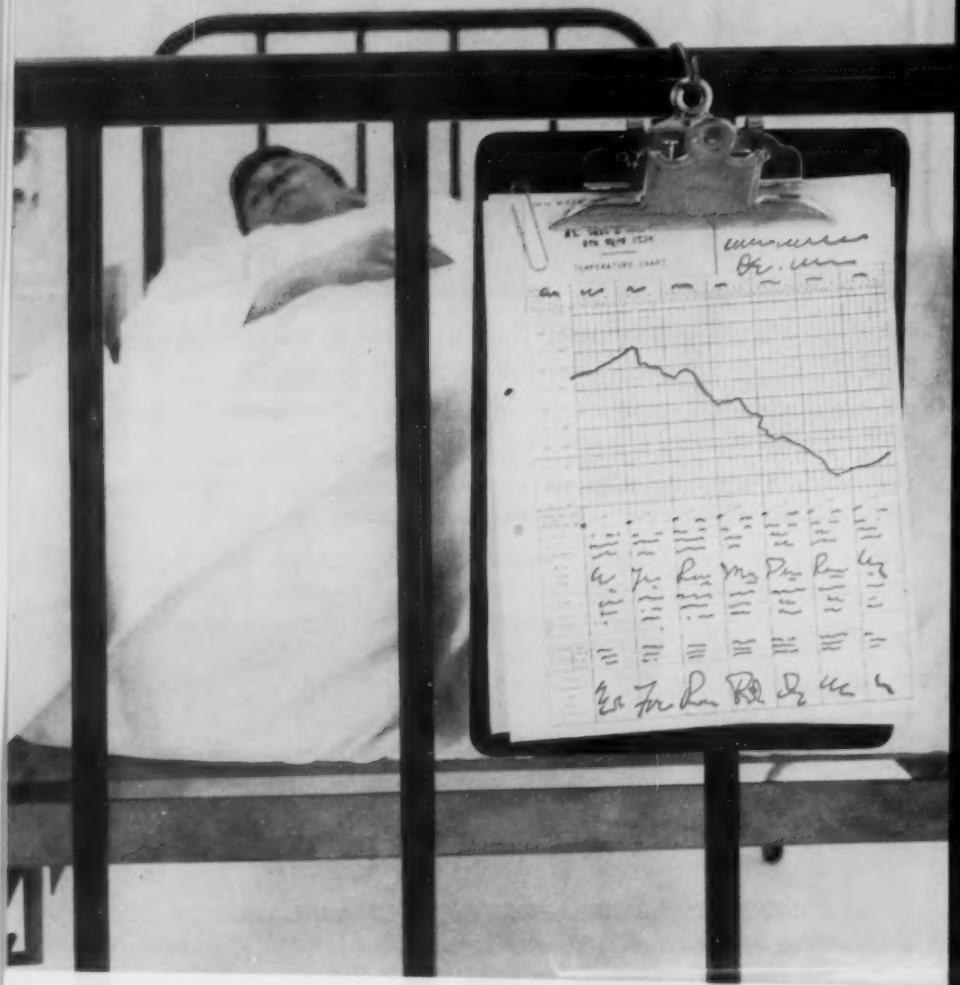

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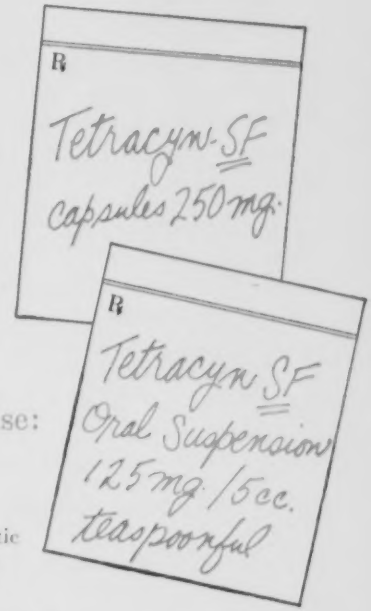

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1. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition. Prepared in Collaboration with the Committee on Therapeutic Nutrition, Food and Nutrition Board, National Research Council, Washington, D. C., 1952. 2. Marti-Ibáñez, F.: Antibiotic Med. *1*:247 (May) 1955. 3. Dumas, K. J.; Carlozzi, M., and Wright, W. A.: Antibiotic Med. *1*:296 (May) 1955. 4. Milberg, M. B., and Michael, M., Jr.: Ann. New York Acad. Sc., In press. 5. Prigot, A.: Ibid.

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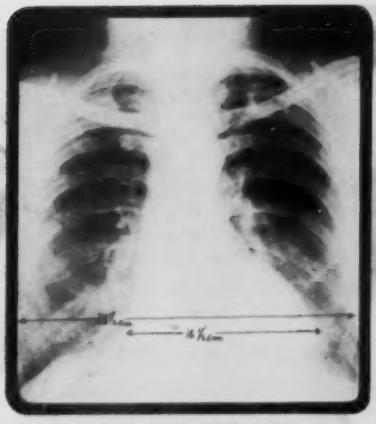

(X-ray, enlarged heart)

ESSENTIAL
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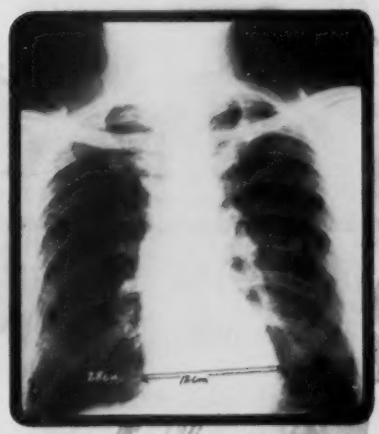

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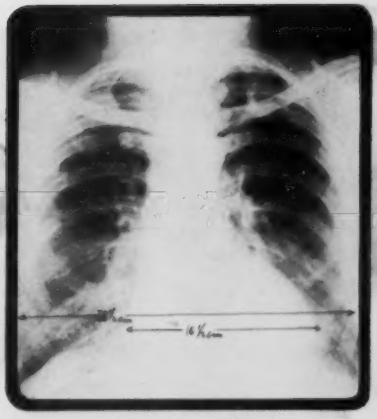

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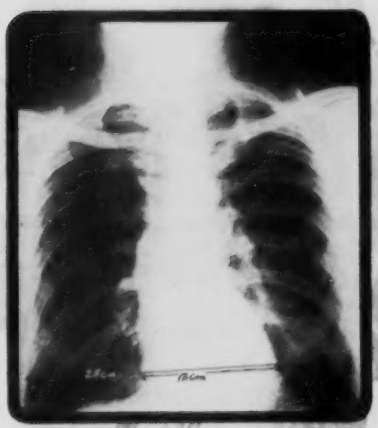

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Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Preservation of Anal Sphincter in Cancer*

QUESTION: When may the anal sphincter be preserved with rectosigmoidoscopy for cancer?

Comment invited from

MANUEL E. LICHTENSTEIN, M.D.
R. K. GILCHRIST, M.D.
WALTER G. MADDOCK, M.D.

► TO THE EDITORS: The anal sphincter may be preserved in that group of patients with carcinoma of the rectum and sigmoid in whom the affected bowel can be resected at least 5 cm. below the lower palpable edge of the lesion, together with the lymph node–bearing fat in the regional zone of spread, and restoration of continuity can be effected. Thus lesions in the upper rectum and sigmoid can be removed by anterior resection.

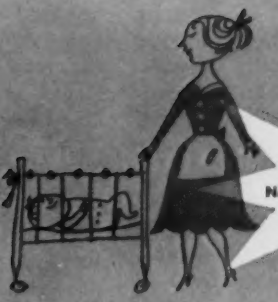
Lower rectal lesions are removed by abdominoperineal resection without preservation of the sphincters.

Patients with lesions in the midrectum between 5 and 10 cm. above the anal canal pose the problem of adequate removal when preservation of the sphincters is attempted. Some surgeons can do this through an abdominal approach while others mobilize the bowel abdominally, resect the bowel with the adjacent tissues through a perineal approach, and restore continuity by end-to-end anastomosis. This is well described by Dr. R. Russell Best and when it can be accomplished successfully is a credit to the surgeon and a happy circumstance for the patient.

The decision to preserve the sphincter in resection of the midrectum must be withheld until exploration of the abdomen and pelvis reveals the extent of spread of the lesion, its mobility or fixation to adjacent structures, and the likelihood of retrograde lymphatic spread in the presence of enlarged nodes in the mesentery of the bowel. A large lesion with fixation requires a more widespread resection of tissue, and the effort to preserve the sphincter will decrease the scope of the resection sufficiently to allow for extensive local recurrence. In the obese and heavy-set patient, complete removal of the disease, even without preservation of the sphincter, is difficult. The elderly patient with one or several concomitant disabilities may not be able to withstand a time-consuming perineal type of resection with restoration in continuity.

Thus resection of the midrectal lesion cannot be undertaken lightly. Preservation of structures that must

*MODERN MEDICINE, May 1, 1955, p. 107.



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remain viable and at the same time adequate removal of the disease are efforts that are frequently at odds. A compromise in favor of preservation of the sphincter may result in a perineal colostomy or fistula or gangrene of the proximal segment. That these may be corrected by a subsequent abdominal perineal resection with an abdominal colostomy is not always a comfort to either patient or surgeon.

The occurrence of carcinoma at the suture line after colon resection is not always related to inadequate removal. The zone of involvement within the bowel wall usually does not exceed 3 to 4 cm. and a 4- to 5-cm. margin beyond the lesion should be a safe zone. However, even wider margins have not been free from the seeding of cells at the anastomoses. The useful suggestions of both Cole and Best may help to avoid this mode of recurrence but the manipulations incidental to resection of a midrectal lesion with anastomoses make occlusive ligation difficult and irrigation is not altogether free from the risk of dispersion of cells in the open perineal wound.

Until the surgeon has the opportunity to operate on patients with smaller lesions in the midrectum, the abdominoperineal resection without preservation of the sphincters will offer the best opportunity to remove the disease. However, in a selected group of patients with malignant lesions in the midrectum, resection with preservation of the sphincter is possible. The perineal approach to effect restoration in continuity is a technical advancement in this field of surgery. It is to be hoped that with the recognition of early lesions a larger number of patients may derive benefit from this procedure.

MANUEL E. LICHTENSTEIN, M.D.
Chicago

► TO THE EDITORS: In rectal lesions below the perineal reflection, an abdominoperineal resection is required. Lesions that are in the parts of the bowel that are completely covered by peritoneum, at least anteriorly, can usually have a reestablishment of continuity. This has nothing to do with the centimeter ruler but is an anatomic landmark.

R. K. GILCHRIST, M.D.
Chicago

► TO THE EDITORS: Surgeons have been thinking about the problem of curing cancer of the rectum yet saving the anal sphincter for over a hundred years, and it is unlikely that any possible procedure to accomplish this purpose can be thought of now that has not been tried before.

The primary object of these efforts should be the eradication of the cancer and not the saving of the sphincters. Yet when thorough surgery, based on the known directions and extent of spread of the primary tumors, has been carried out and nothing further is to be gained by removing the last 2 to 4 cm. of the rectum, the latter and the sphincters can be returned to excellent function by an anasto-

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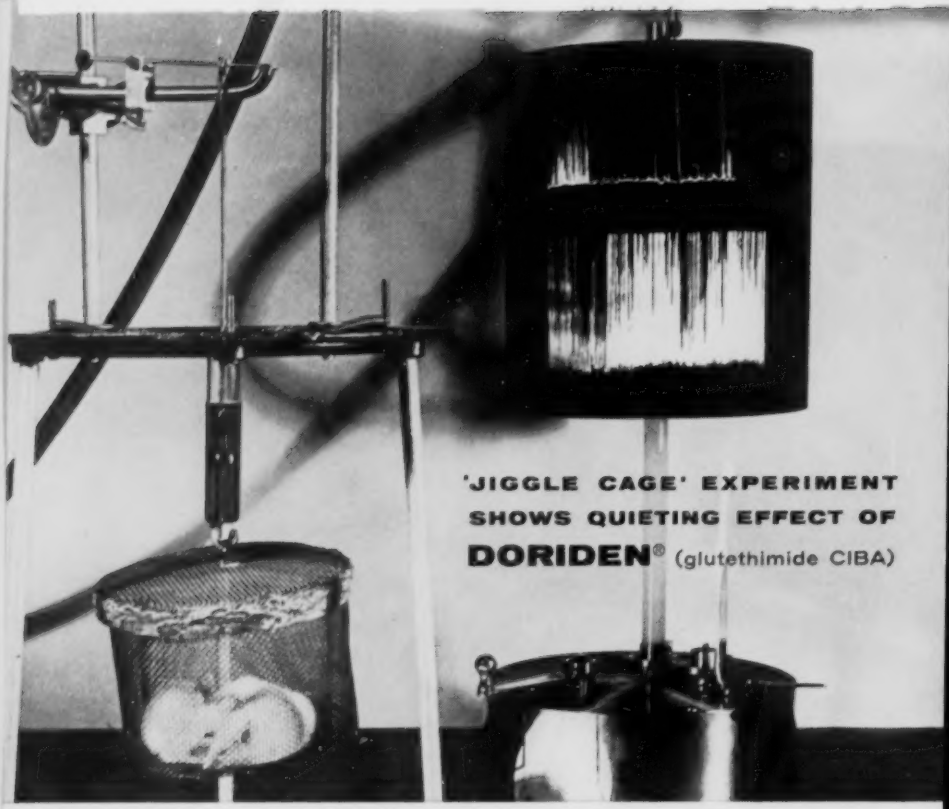

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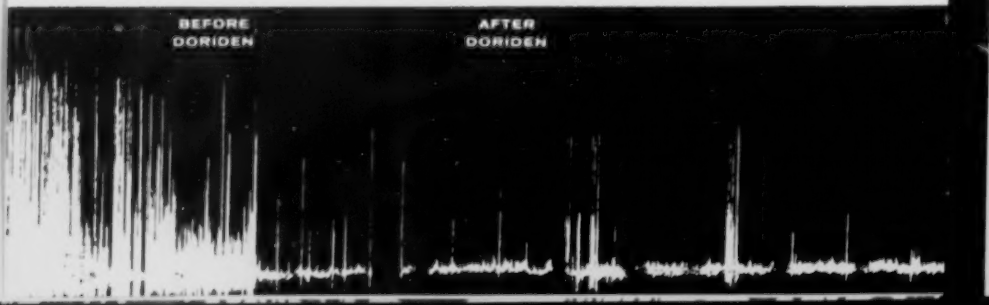

mosis with the lower end of the remaining upper segment.

Two factors of spread in the rectum make saving of the sphincters sometimes possible. One is that lymph node metastasis is practically always upward unless the cancer has been so extensive as to block the upward nodes with tumor tissue. For the latter patients, no operation will do much good. For all the others, a complete resection of the lymph node–bearing tissue 5 to 6 cm. below the tumor is sufficient. Fortunately, transecting the rectum at the same distance is also satisfactory, since intramural spread of a colon or rectal cancer rarely is more than 2 cm. from the primary lesion.

Thus I consider that somewhat movable, small to medium cancers of the rectum that are 8 cm. above the upper end of the anal canal can be safely resected by the combined abdominoperineal approach, doing the anastomosis through the posterior wound. The upper segment anastomosed to the low rectum will often be the descending colon rather than the sigmoid, because needed ligation of the inferior mesenteric artery and clearing of all periaortic lymph nodes from the duodenum downward may leave only the descendens with a good blood supply. If the splenic flexure and left transverse colon are freed, the descendens can be brought to the low rectum without tension.

To protect and to obtain complete healing of these low rectocolon anastomoses, I do a temporary transverse colostomy and let it remain for four to twelve weeks. These low sphincter-saving operations are harder to do and have more complications than the older Miles abdominoperineal resection, but they do avoid colostomies for some patients, give normal sphincter control, and when properly selected give as good five-year cures as when the final rectal segment and sphincters are also excised.

For cancer at or above 10 to 12 cm., a good resection and rectocolostomy can be done entirely through an anterior abdominal approach.

WALTER G. MADDOCK, M.D.
Chicago

Breech Delivery in General Practice*

QUESTION: What is the proper management of breech presentation?

Comment invited from

E. L. KING, M.D.
RICHARD H. MARQUETTE, M.D.
W. H. GRIMES, JR., M.D.

► TO THE EDITORS: If the pelvis is normal and the baby is of average size, as little interference as possible is the best policy for labor in breech presentation. The patient is made as comfortable as possible during the first stage with sedation, using as little as possible of whatever drug the obstetrician prefers. In the second stage, labor is allowed to proceed.

I agree with Dr. Frederick J. Roemer that it is best to allow the patient to expel the breech spontaneously. I would not wait until

*MODERN MEDICINE, April 15, 1955, p. 109.

the umbilicus is delivered over the perineum before assisting with gentle traction. After the lower extremities are delivered, moderate traction is in order. I prefer to have an assistant or nurse follow the head down with a hand over the abdomen, not pushing, as this may cause extension of the arms.

Blind adherence to the old rule that not more than eight minutes is to elapse between the birth of the umbilicus and the delivery of the head often results in serious injury to the baby. If one gets nervous, makes frantic traction, tries to rush with the delivery of the arms, and pulls with considerable force, intracranial and intraspinal injury may result. Too much pressure in grasping the trunk may cause adrenal hemorrhage, which is often found at autopsy of babies delivered by breech. Unnecessary delay is, of course, to be avoided. I like to have an assistant or the nurse press firmly on the head after the arms are delivered, so that I do not make too much traction on the body. Piper forceps for the delivery of the head is very useful when there is delay at this stage.

The statement by Dr. Roemer that there is only one point of pressure on the cord is a good one. Of course, as he mentions, prolapse of the cord is quite different and requires prompt treatment.

The use of pudendal block is to be commended. The mother remains conscious and can aid by using her uterine contractions and abdominal muscles effectively. Episiotomy is always indicated in a primigravida and frequently in a multigravida as well.

E. L. KING, M.D.

New Orleans

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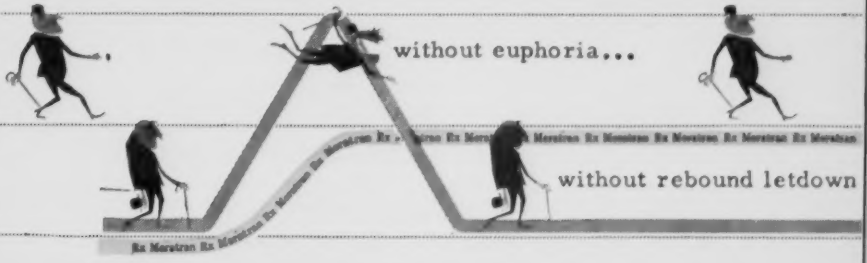

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► TO THE EDITORS: Only a few tenets regarding breech delivery have found universal acceptance. Foremost of these is careful evaluation of the bony pelvis, the soft tissues, and the quality of labor. Cesarean section is preferred to traumatic delivery after a prolonged labor. Of equal importance is the emphasis on slow, deliberate delivery regardless of the method employed. Thirdly, it is agreed that an assisted breech delivery is superior to either spontaneous or operative delivery.

Beyond this there is a confusion of conflicting ideas and each author emphasizes certain procedures which seem to be based more on emotion than on fact. I feel that the underlying problem is the poor preparation of the maternal soft parts. The breech is inefficient for cervical dilatation and retraction. This defect is overcome by adequate first stage analgesia and regional anesthesia for delivery. The latter is the subject of controversy, but in reviewing 445 breech deliveries, I found that regional anesthesia was associated with improved fetal survival. This was most striking in premature infants; the corrected fetal mortality was 29.6% with general or no anesthesia and 10.5% with regional anesthesia. I prefer continuous caudal to spinal anesthesia because it can be easily prolonged, the level is adjustable, and the effect on the abdominal muscles seems less profound. This last point is of some importance since I employ the patients' voluntary bearing down efforts for delivery.

As to the actual technics, I use Bracht's maneuver to assist the breech to the level of the shoulders. The shoulders are rotated and delivered beneath the symphysis as advocated by Potter. I then elect to use forceps on the aftercoming head in every case. Holland found an 88% incidence of tentorial tears in autopsies of babies who expired after breech delivery. He felt that this was due to too rapid decompression of the fetal head at the moment of delivery. The use of forceps is the only method that will allow controlled delivery of the head in every case.

RICHARD H. MARQUETTE, M.D.
San Bruno, Calif.

► TO THE EDITORS: In breech presentation, ether and the Trendelenburg position are the most effective means of stopping pains and relieving compression on the cord. As much spontaneous progress as possible should be obtained and extraction should be deferred until no progress occurs for at least one hour.

For cephalic presentation, Dührssen's incision is occasionally of value if the head is low enough for forceps, the cervix is not completely dilated, or occult prolapse has occurred. Traction should be withheld until the cord presents; before traction is started, a loop of cord is pulled down to lessen chance of compression. Forceful pushing of the head into pelvis from above is avoided.

Perineal retractors and forceps must be accessible when delivery is begun. Perineal retractors facili-

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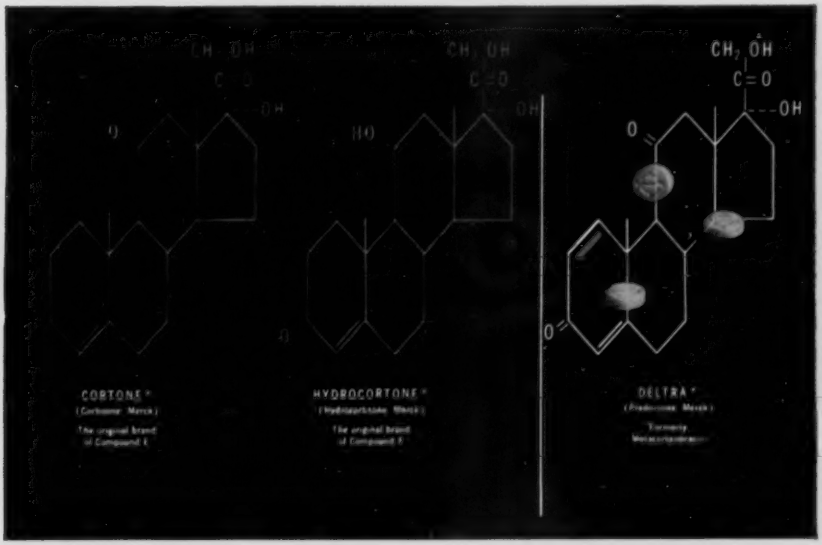

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tate aspiration of fetal air passages and assist in resuscitation with arrest of the head. Forceps of the type more frequently used with cephalic presentation are sufficient.

Partial extraction, as described by Eastman, is highly favored.

W. H. GRIMES, JR., M.D.
Atlanta

Benign Prolapse of Gastric Mucosa*

QUESTION: How often does benign prolapse of gastric mucosa through the pylorus cause symptoms and require operation?

Comment invited from

LT. COL. EDDY D. PALMER
THOMAS G. ORR, M.D.
STANLEY A. KORNBLUM, M.D.
I. W. KAPLAN, M.D.
FREDERICK ELIAS, M.D.
CLAUDIUS Y. GATES, M.D.
A. A. DE LORIMIER, M.D.
CHARLES R. FIELDER, M.D.
WILLIAM T. ARNOLD, M.D.

► TO THE EDITORS: The upper gastrointestinal tract is cursed with a plethora of minor variations from the normal which can be used as diagnostic excuses for symptoms which are not understood. Duodenal diverticula, chronic gastric volvulus, diaphragmatic eventration, and cascade stomach are some of these. I believe that transpyloric prolapse of the gastric mucosa is another. I doubt that prolapse is ever the correct explanation for any abnormal abdominal sensations, vomiting, or other distress.

Radiologically, prolapse of the mucosa can simulate prolapse of mucosal tumors, but I would not think it could often be confused with nonprolapsing gastric diseases, as Dr. Jacob Lichstein lists. The roentgen signs are limited to the duodenal bulb, and they may appear like those of certain other bulbar abnormalities, particularly brunnerian hyperplasia.

A few cases have been reported which prove that prolapsing mucosa can become superficially traumatized, with erosion and bleeding. I have never encountered this and suppose it is very rare, in view of the great frequency with which prolapsed mucosa can be demonstrated roentgenologically.

To me, the importance of mucosal prolapse lies in the warning that, if one looks hard enough, some anatomic derangement can usually be found in any patient with functional upper gastrointestinal disease. The discovery of prolapse does not permit one to feel much closer to the patient's problem.

LT. COL. EDDY D. PALMER
Washington, D. C.

► TO THE EDITORS: From published reports it seems probable that prolapse of gastric mucosa is found in 1 to 3% of roentgenologic gastric studies. The number in which operation is indicated is not known.

Prolapse of gastric mucosa into the duodenum is an entity. It is known that some cases produce symptoms and others do not. It is diagnosed only by the roentgenologist. There are no clinical signs or

(Continued on page 202)

*MODERN MEDICINE, Apr. 15, 1955, p. 90.

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symptoms characteristic of this condition. Most uncomplicated cases can be treated adequately without operation. Operation is indicated when [1] symptoms cannot be relieved by medical therapy, [2] the prolapse causes bleeding, is complicated by ulcer, or causes obstructive symptoms; and [3] a benign or malignant tumor is suspected.

An alert roentgenologist will be aware that prolapsed gastric mucosa should always be considered in his differential diagnosis of diseases involving the pylorus and first portion of the duodenum.

When prolapsed gastric mucosa exists, and the patient has gastric symptoms, it is of great importance that a thorough study be made to exclude other causes of symptoms before instituting therapy.

When operation is indicated, partial gastrectomy is favored as the most satisfactory treatment.

THOMAS G. ORR, M.D.
Kansas City, Kan.

► TO THE EDITORS: I feel that benign prolapse of the gastric mucosa through the pylorus causes symptoms more often than realized. The problem is to make a definitive diagnosis.

All of us see in our practice, patients with intermittent atypical gastric complaints. A single negative gastrointestinal series is not sufficient to rule out this clinical entity. Inasmuch as this is actually a sliding type of herniation, repeated roentgenographic examinations may be necessary to establish the diagnosis.

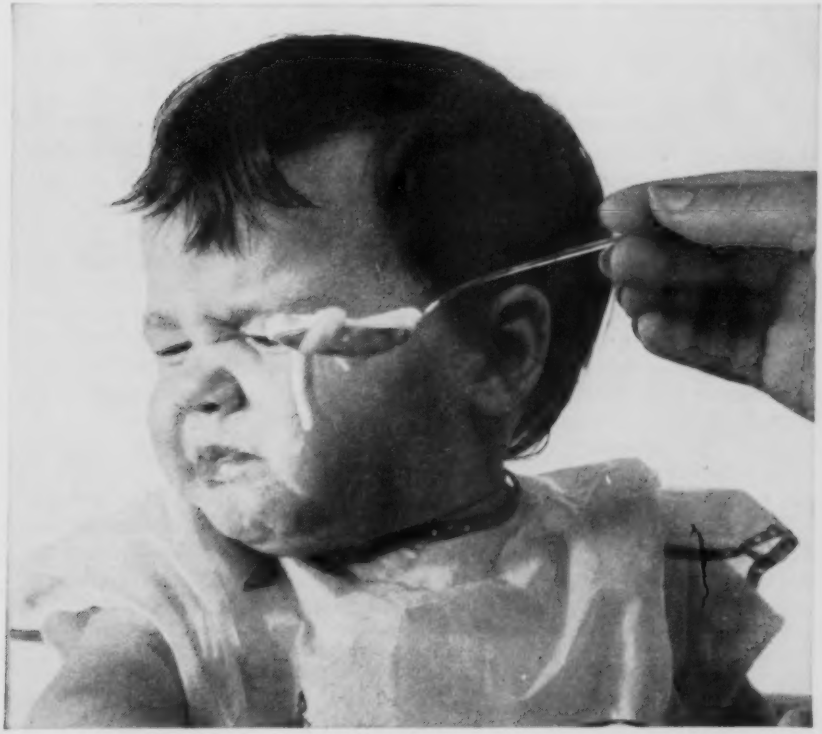
Most of these patients will respond to a medical regime. Surgery should be reserved for [1] patients with a symptomatology that is severe enough to make them economic cripples who cannot or will not be controlled medically and [2] patients with gross hemorrhage or persistent melena.

The surgical procedure of choice is a subtotal gastrectomy.

STANLEY A. KORNBLUM, M.D.
Monticello, N.Y.

► TO THE EDITORS: Benign prolapse of gastric mucosa through the pylorus is found in approximately 3% of all patients examined roentgenologically for upper gastrointestinal disease. Just how often it causes symptoms is difficult to determine; in most cases in which it is found it is asymptomatic. It may be seen coexisting with hiatal hernia, duodenal and prepyloric ulcer, or hypertrophic gastritis. These conditions, by causing hypermotility of the stomach, may play a part in the production of the prolapse. It is my impression that prolapse of the gastric mucosa alone is an uncommon cause of upper gastrointestinal symptoms. Prolapse of the gastric mucosa through the pylorus is found more commonly in the older age group, the majority of cases occurring in the fourth and fifth decades.

The clinical picture of a prolapsed gastric mucosa through the pylorus is so variable that a definite diagnosis cannot be made from symptoms alone. The more frequent complaints are epigastric pain of varying intensity, digestive symp-



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toms such as loss of appetite, epigastric fullness, nausea and vomiting, and gastrointestinal bleeding as revealed by hematemesis and melena or persistent occult blood in the stool. Every case of unexplained gastrointestinal bleeding should be investigated for a possible prolapse.

The physical findings in most cases are noncontributory. Roentgenograms are most valuable in establishing a correct diagnosis. The prolapse is often intermittent and it may be necessary to repeat studies before a definite diagnosis can be made.

Patients with upper gastrointestinal symptoms in whom the only positive finding is prolapse of the gastric mucosa should have a trial of medical management. This should include a bland, soft diet and antispasmodic drugs. If conservative treatment is ineffective, exploratory laparotomy and gastrotomy are indicated. If a prolapse is the only condition found, pyloroplasty alone or combined with excision of the redundant mucosa gives excellent results. Gastric resection to my mind is too radical for this benign condition.

I. W. KAPLAN, M.D.
New Orleans

► TO THE EDITORS: In my experience, symptoms do occur in the majority of cases of prolapse of the gastric mucosa which enter the duodenal bulb through the pylorus in

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any marked degree. These generally parallel those found in duodenal ulcer but may be extremely atypical. Thus a patient may complain of epigastric pain, related or unrelated to food, with or without relief from alkali. There is certainly no definite symptom complex which is characteristic of benign prolapse. Roentgen examination is the only possible means of diagnosis.

Operation, in my opinion, should be reserved for those patients with recurrent hemorrhage and persistent intractable pain.

FREDERICK ELIAS, M.D.
Monticello, N.Y.

► TO THE EDITORS: Benign prolapse of the gastric mucosa through the pylorus is a relatively common finding, based upon roentgenographic examinations. The reported incidence in gastrointestinal studies varies from 0.1% to as high as 18%. Many of these cases are reported as asymptomatic. Symptoms, when present, follow no dependable pattern. They are often vague, and diagnosis of functional disorders may be made unless prolapse is borne in mind and specifically sought. Abdominal cramping, epigastric colicky distress often aggravated by food, heartburn, nausea, and vomiting are some of the common complaints. Manifestations of bleeding may be present, either as hematemesis, or as occult blood in the stools.

It should be emphasized that the treatment of this condition is primarily nonsurgical. Operation is indicated when medical treatment has been ineffective, or when persistent bleeding, pyloric obstruction, or unrelieved pain is present.

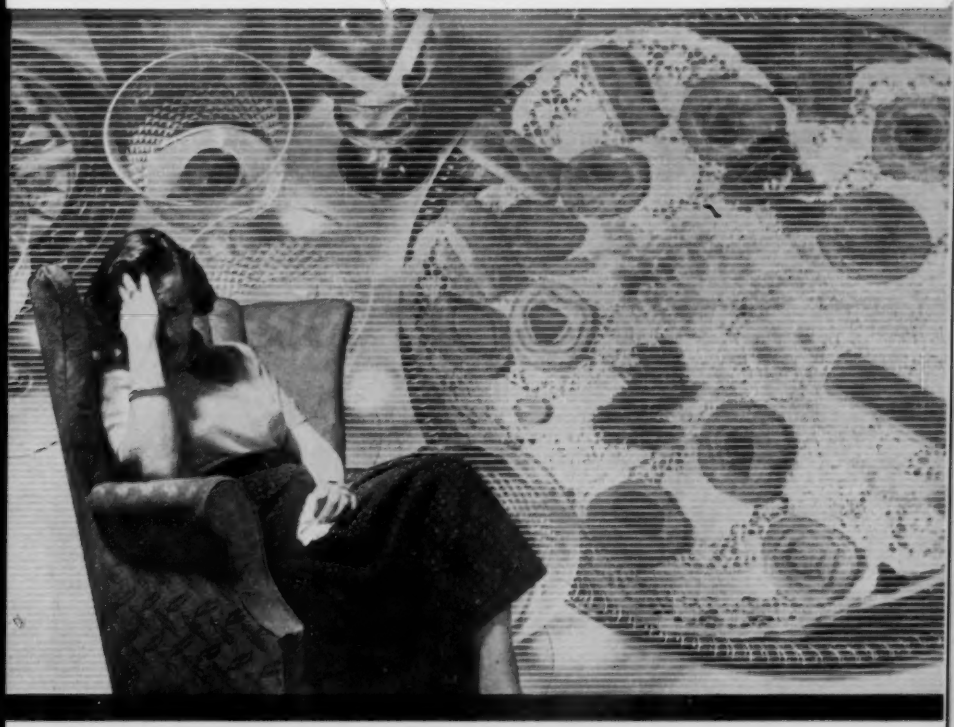
To emphasize the relative infrequency with which surgical correction is employed for this condition, a review was made in 2 general hospitals of 574 consecutive operations performed upon the stomach and duodenum. The study failed to reveal any case in which surgery was undertaken specifically for the relief of prolapse of the gastric mucosa through the pyloric ring or in which this condition was reported as an important finding at the time of surgery. In those rare cases when surgery is indicated, the following procedures have been employed:

- Incision of the anterior stomach wall through the pylorus, excision of the redundant mucosa, and pyloroplasty
- Subtotal gastric resection
- Gastroenterostomy
- Simple excision of the redundancy with or without anchoring of the mucosa to the antrum.

CLAUDIUS Y. GATES, M.D.
San Francisco

► TO THE EDITORS: Currently, there appears to be a tendency for the medical profession to disregard prolapse of the gastric mucosa. When the evidence is pointed out, roentgenologists hear the comment that it is "likely of no clinical significance." This comment is made even though patients continue to experience severe symptoms simulating peptic ulcer and even though

(Continued on page 210)



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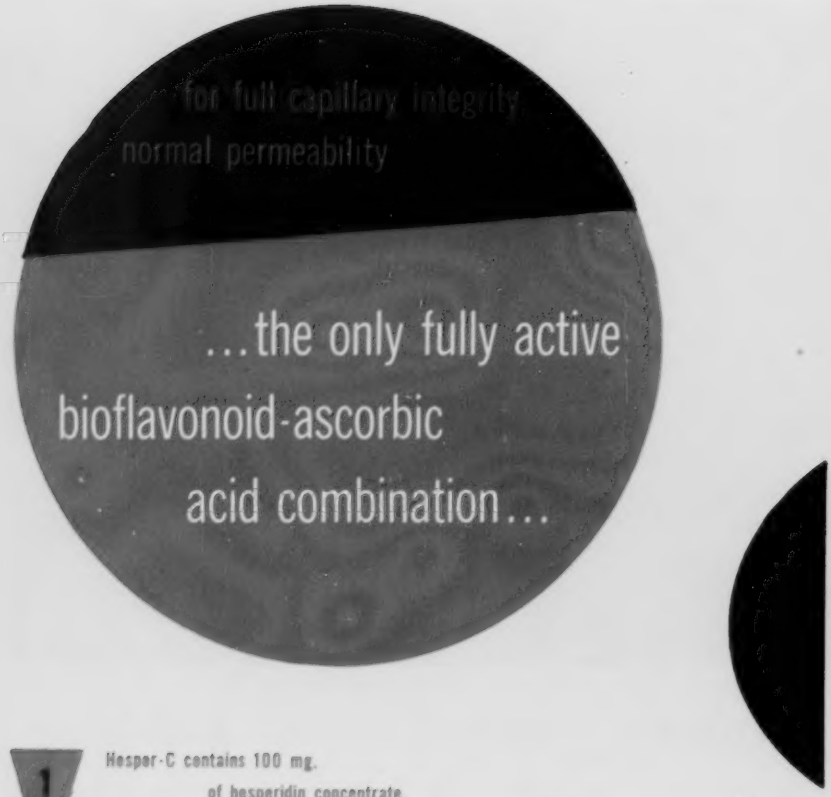

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repeated roentgenoscopic examinations fail to demonstrate ulceration.

Statistics relative to actual reporting of this condition are contradictory. For instance, of Feldman's series, the incidence appears to be approximately 0.1%; Cove and Curphey cited an incidence of 3.38%; Ferguson, 7 to 7.2%. These wide variations would seem to imply uncertainties on the part of observers, and the importance of the condition seems even more debatable when considering that Lewin and Felson observed this condition in 18% of 100 asymptomatic patients.

Regardless of these controversial aspects, Archer and Cooper, Dileo, Kuker and Shepard, Kaplan and Shepard, and others have reported definite instances of gastrointestinal bleeding due to prolapse of the gastric mucosa. Some of the cases showed occult blood in the stools, others suffered hematemesis. There are several cases on record in which the medical picture of pernicious anemia could be traced only to this condition.

In general, a disturbance such as transpyloric prolapse of the gastric mucosa is identified and appreciated only to the extent of interest and respect applied to it. It must be emphasized that even at surgery the condition may not be discernible because of retraction of folds which prolapse only intermittently. Nevertheless, clinical improvement has been accomplished after removal of a "collar" of redundant gastric mucosa or by partial gastric resection with gastrojejunostomy.

After analyzing 2,121 consecutive gastrointestinal series, we reported the evidence of some degree of prolapse among 4.9% of patients referred because of the "peptic ulcer syndrome." Correlated evidence suggested the following contributory factors:

1] Chronic low-grade inflammation as found with antral gastritis

2] Hyperperistalsis as might be related to nervous tension or to hypochlorhydria

3] Nature's expulsive reaction to the presence of an ulcer, especially when located in the cap of the duodenum or at the pylorus, or due to a constricted pyloric ring

4] The presence of a polyp or similar tumefaction such as might produce irritation in the duodenum or the distal stomach

5] Merely the drag of hypertrophied rugae such as has been noted in individuals who enjoy one tremendous meal a day. This distends the stomach to excessive capacity as compared with ordinary physiologic limits.

Roentgenologically it is important to actually trace gastric rugae extending into the base of the cap of the duodenum. In this regard, it is emphasized that excessive antral spasm or chronic hypertrophy of the antral and pyloric musculature may lead the overzealous observer to report prolapse unduly.

In short, it would appear that this disturbance warrants definite recognition. Our own series indicates that surgical interference is seldom required; about 2% of the cases which we have reported have been operated on. It must be appreciated

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Proteus rettgeri	Diplococcus pneumoniae
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Pseudomonas aeruginosa	Micrococcus (Staph.) pyogenes var. albus
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Salmonella enteritidis	Mycobacterium tuberculosis
Salmonella paratyphi	Streptococcus faecalis
Salmonella schottmülleri	Streptococcus pyogenes (hemolyticus)
Salmonella typhosa	Streptococcus mitis (viridans)
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that benefits would have been lacking even for the small group treated surgically, had the condition not been pointed out. Some of them likely would have gone on to exsanguination and death, as with the occasional case reported in the literature. Furthermore, it is believed that the majority of the others have been benefited by suitable medical management.

A. A. DE LORIMIER, M.D.
CHARLES R. FIELDER, M.D.
San Francisco

► TO THE EDITORS: In cases of prolapsed gastric mucosa, it is generally agreed that the symptoms, if any, depend upon the degree of prolapse. Bockus concluded that moderate degrees of redundancy of the pyloric mucosa are not uncommon and that unless there is an associated gastritis or actual prolapse of the gastric mucosa into the duodenum interfering with gastric emptying, symptoms are not produced. Other investigators believe that lesser degrees of prolapse without associated gastritis are capable of producing symptoms.

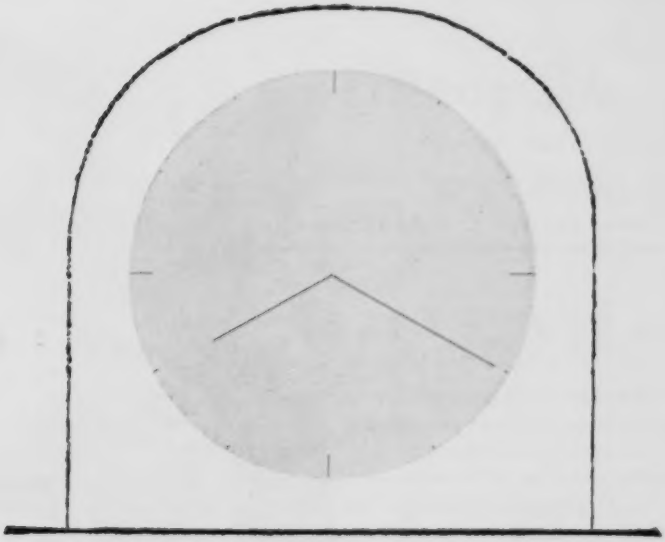
It is true that the symptomatology associated with prolapse of the gastric mucosa is not sufficiently characteristic to warrant a clinical diagnosis and that the diagnosis is established by the findings at roentgenographic examination. In general, the symptoms manifested are usually suggestive of disease of the upper gastrointestinal tract, and the condition is encountered most frequently in patients in the fourth, fifth, and sixth decades of life.

Symptomatic medical treatment will suffice in the majority of cases. A bland diet and antispasmodics usually prove of benefit. When nervous tension appears to be a factor, sedation with barbiturates is beneficial. Only patients who have such complications as pyloric obstruction, ulceration, and repeated hemorrhage or in whom the findings do not exclude malignancy require surgical treatment; these cases are indeed rare.

The existence of this entity has been questioned because it lacks a definite clinical pattern. This skepticism is justifiable and results from the frequent association of other gastrointestinal lesions—poorly localized pain, nausea, vomiting, and dyspepsia. As is true of most other gastrointestinal lesions, roentgenographic information is necessary to establish its existence.

WILLIAM T. ARNOLD, M.D.
Houston

"Mr. Gooslethwaite, we would prefer that you don't accompany your guests to the door."



round-the-clock antihistamine protection

Green writes: "Last year I obtained for investigational use, the antihistamine chlorprophenpyridamine maleate, so prepared . . . that its resultant therapeutic effect was designed to last approximately twelve hours following the administration of a single oral dose."

After giving this preparation ('Teldrin' *Spansule* capsules) to 357 allergic patients, Green reported:

"The results...confirm the postulated long-acting property and low side effect liability of ['Teldrin' *Spansule* capsules]."

Green, M.A.: Ann. Allergy *12*:273

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chlorprophenpyridamine maleate

Spansule*

brand of sustained release capsules

Antihistamine

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8 mg.
(1 dot on capsule) &
12 mg.
(2 dots on capsule)

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the originators of sustained release oral medication

*T.M. Reg. U.S. Pat. Off. Patent Applied For.

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-292

THE CLUE

ATTENDING M.D: We have a patient referred from the orthopedic service because of dyspnea, abdominal swelling, and edema. He is a 37-year-old construction worker.

VISITING M.D: Did these symptoms come on suddenly?

ATTENDING M.D: No, onset has been gradual, and symptoms began eight months ago with shortness of breath. At first, this was thought to be secondary to an increase in weight and lack of exercise. This is what happened. A little over a year ago the patient fell from some scaffolding and fractured his left ischium and fourth lumbar vertebra. He was hospitalized here for several weeks and treated with a body cast, braces, and so on.

VISITING M.D: And while in bed and during convalescence he gained weight and softened up.

ATTENDING M.D: That's right. Anyway, when he began getting up and around again, he noticed that exertion would leave him winded. For a month or so, not much was thought of it. He had no orthopnea but the dyspnea persisted. The fractures healed normally and he tried going back to work, but climbing ladders was very hard and he tired easily. The dietitian got him to lose the extra fat, but he was still dyspneic and weak.

PART II

VISITING M.D: When did the edema appear?

ATTENDING M.D: About three months ago. Both of the ankles became puffy at night, but the swelling was gone by the next morning. However, for the last month edema has been constant, and last week it got worse. The patient hadn't been back to see the orthopedic doctor until last week, when he was admitted immediately.

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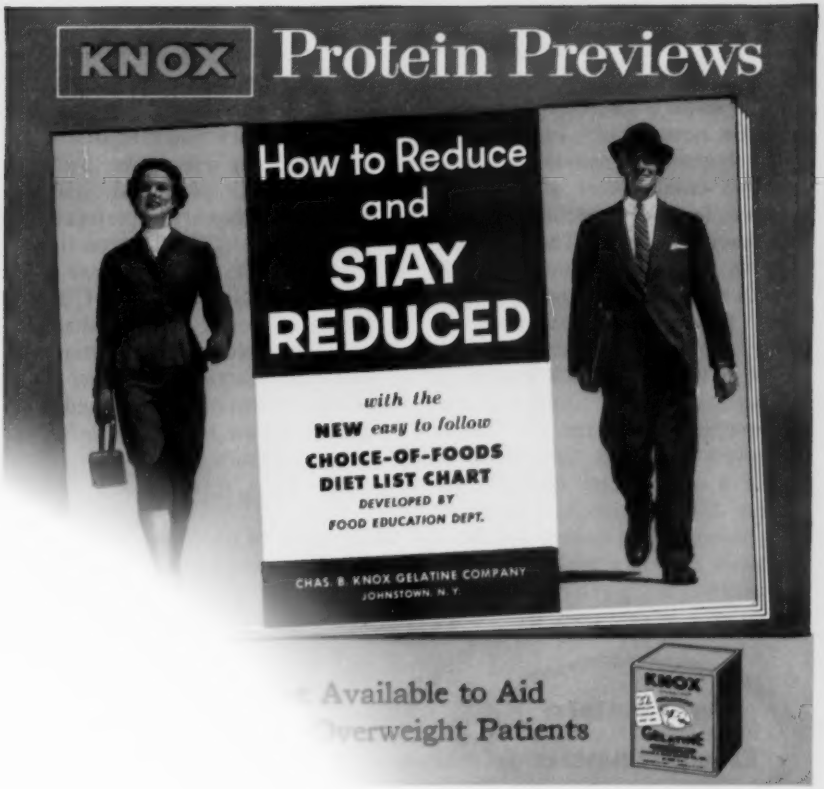
VISITING M.D: Have you found out what's wrong?

ATTENDING M.D: Well, this is fairly definitely a cardiac problem. Ve- distention in the neck; a pulmonic sound or

of the pulmonary valve due to high pulmonary artery pressure. What about cyanosis and clubbing?

ATTENDING M.D: No clubbing, but the patient noticed blueness of the nails when he was dyspneic. I noted a definite dusky hue to beds and lips when I ex-

another
by-



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NAME AND ADDRESS

call it a real hilar dance. I believe that, although pulmonary pressure is high, pulmonary blood flow is probably not excessive.

ATTENDING M.D: That's all very well, but where does it take us?

vena cavagram.

PART IV

ATTENDING M.D: *(Later that day)* While we were preparing for the cavagram, the patient suddenly became extremely dyspneic with

substernal pain and deep cyanosis and expired within a few minutes. I feel rather badly about all this. Do you think we could have handled the case differently?

VISITING M.D: I doubt it. If my suspicions are correct, the damage was done months ago. This final illness certainly sounds like massive pulmonary embolus and supports my theory that the patient had suffered multiple small pulmonary emboli leading to a cor pulmonale.

ATTENDING M.D: The pathologist is doing the autopsy right now. He did find a massive embolus filling the main pulmonary artery. Also, many other smaller emboli, most of which were organized, were found throughout both lungs.

VISITING M.D: Ask him to pay special attention to the inferior vena cava and the iliac veins. I'm sure he will find thrombi which have been feeding small emboli to the lungs over the months since the patient's pelvis was fractured. Unfortunately, by the time he returned for treatment, the damage had been done. On the other hand, it would have taken some excellent diagnostic work to uncover the pelvic thrombotic disease earlier.

ATTENDING M.D: What could have been done?

VISITING M.D: Well, ligation of the inferior vena cava might have prevented the emboli from destroying the pulmonary vascular tree.

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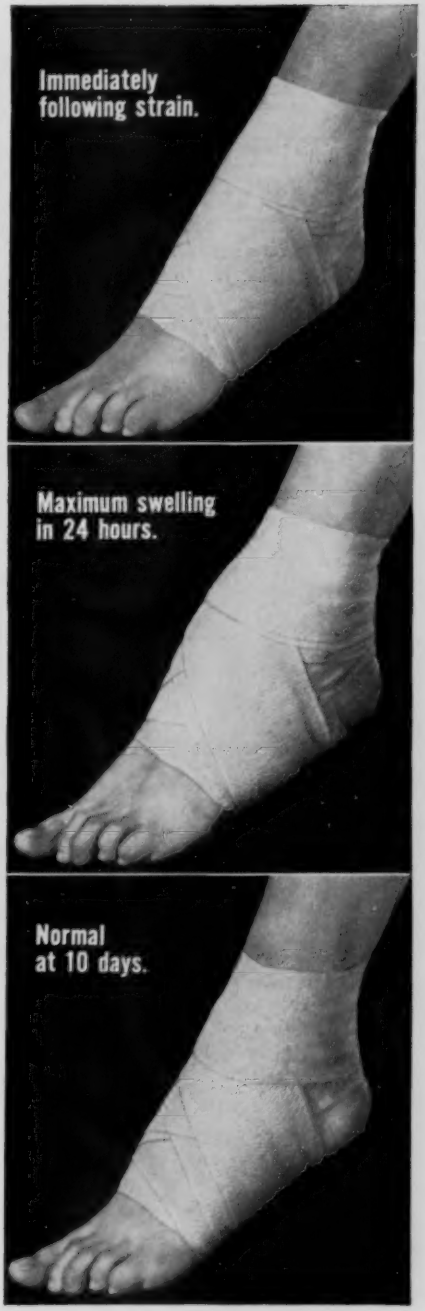

"Would you mind not interrupting until he's finished his *side of the story?"*

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BASIC SCIENCE *Briefs*

Rhythmic Urine Excretion

Nycturia, the inverted rhythm of urinary secretion associated with heart, kidney, or liver disease, can be returned wholly or partially to normal by heavy daytime sedation. Complete bed rest, daytime ambulation, or equal liquid consumption during day and night has no significant effect upon the condition, report Dr. Thomas Zsótér and associates of the University Medical School, Szeged, Hungary. Nycturia in patients with cardiac diseases is probably caused by dysfunction of the central nervous system which is partially blocked by sedation.

Acta med. scandinav. 151:307-316, 1955.

Steroid Metabolism

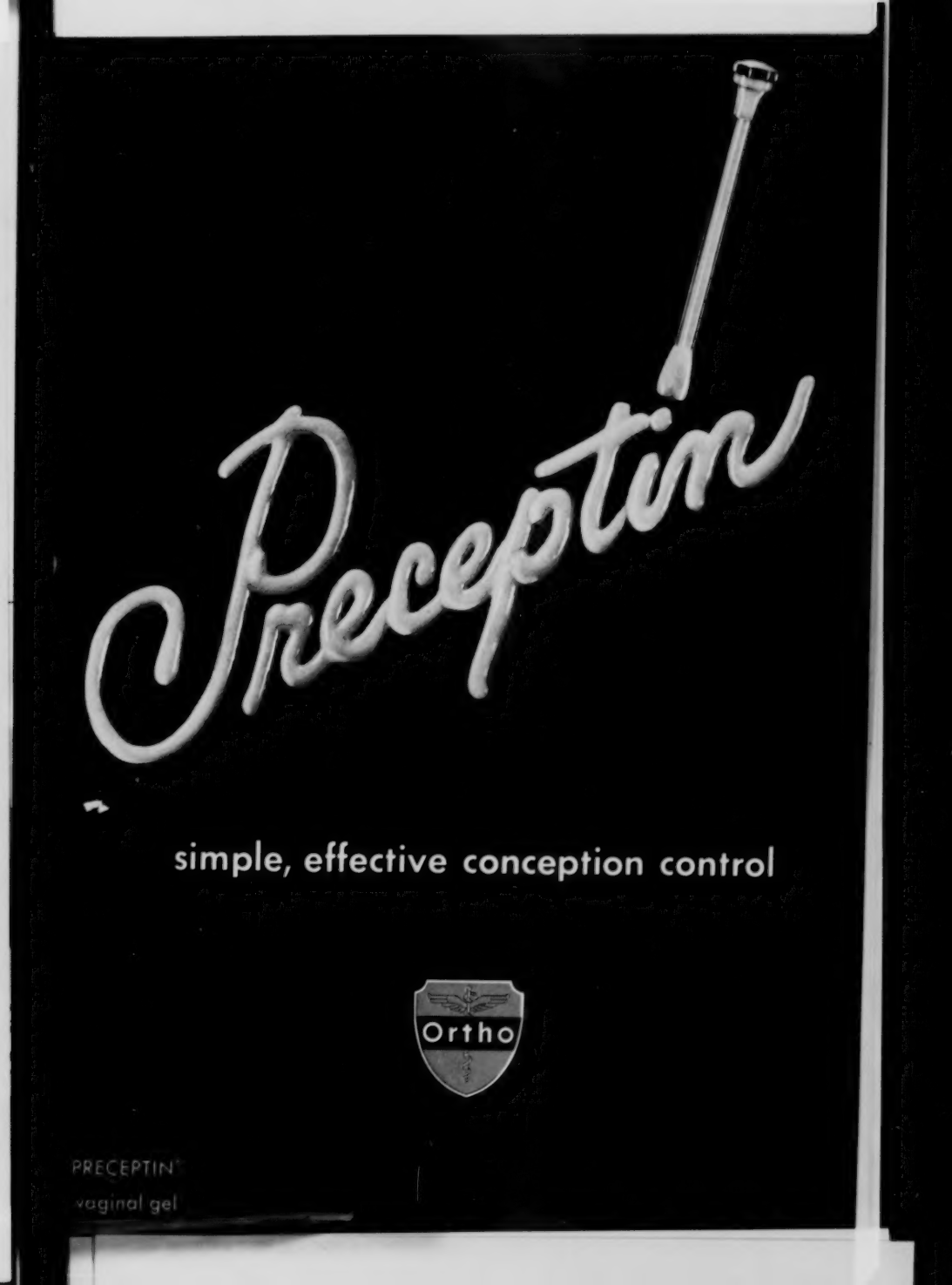
The kidneys and adrenal glands of rats and rabbits appear to be the primary sites of conversion of desoxycorticosterone acetate into a progesterone-like substance, progestin. Administration of DCA to healthy or castrated animals is followed by increases in the serum progestin concentrations within four hours, but the conversion product does not appear when DCA is given to castrated, nephrectomized, adrenalectomized animals, explain Drs. E. A. Lazo-Wasem and M. X. Zarrow of Purdue University, Lafayette, Ind. Serum progestin levels are higher in adrenalectomized than in nephrectomized animals, indicating that the major site of conversion is in the kidney. In vivo incubation of DCA and tissue slices similarly demonstrate adrenal and kidney conversion of the steroid to the progesterone-like compound.

Endocrinology 56:511-515, 1955.

Combined Cardiac Regulants

The danger of producing ventricular fibrillation by the concomitant administration of digitalis and certain other drugs appears to be exaggerated since the combinations do not produce deleterious additive effects on isolated dog hearts. Relatively large doses of quinidine, procaine amide, or such mercurial diuretics as Mersalyl added to the venous reservoir of isolated dog hearts fail to increase or decrease the lethal dose of ouabain, a digitalis-like drug, reports Dr. George Fawaz of the American University of Beirut, Lebanon. Large doses of quinidine alone produce no premature ventricular beats, tachycardia, or fibrillation but procaine amide, which has a less depressive effect on the myocardium than quinidine, may induce ventricular ectopic rhythms.

Proc. Soc. Exper. Biol. & Med. 88:654-656, 1955.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Pituitary and Hypertension

The hypertensive effects of prolonged desoxycorticosterone acetate administration may be inhibited in rats by extirpation of the pituitary glands. Unilateral nephrectomy combined with ingestion of 1% sodium chloride and administration of DCA uniformly induces elevated blood pressure levels and characteristic lesions in the kidney, heart, and blood vessels, reports Dr. Ernesto Salgado of the University of Montreal. Hypophysectomy, in spite of continued DCA administration, however, reduces blood pressure to near normotensive levels, reverses renal hyalinization, and prevents formation of additional vascular or cardiac lesions.

J. Lab. & Clin. Med. 45:865-875, 1955.

Hydronephrosis Mechanisms

That obstructed dog kidneys continue to function appears to be due in part to reabsorption of reflux urine, permitting protein and colloidal particles to reenter the blood stream. Reabsorption of pelvic contents takes place rapidly after ureteral ligation with large sized particles apparently transported to the systemic circulation through actual tears in the lining of the pelvis and adjacent vascular spaces, explain Dr. Lester Persky and associates of Western Reserve University, Cleveland. Serum albumin labeled with radioactive iodine was introduced into the distended pelvis to trace protein passage to the blood stream and radioactive colloidal gold to determine colloidal transportation. Radioactive sodium iodide was used to trace the freely diffusable ion.

J. Urol. 73:740-746, 1955.

Our Office Nurse

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The Aug. 1 winner is

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short REPORTS

Therapy of Barbiturate Coma

Two recently synthesized compounds may rapidly convert severe barbiturate intoxication to safe levels of light anesthesia from which patients spontaneously recover. The drugs, NP13 (BB-methylethylglutarimide) and DAPT (2:4-diamino-5-phenylthiazole hydrobromide or hydrochloride), appear to be more effective than central analeptic therapy and do not induce convulsions or secondary depression, report Dr. A. Shulman of the University of Melbourne and associates. Doses of 1 cc. DAPT followed by 10 cc. NP13 are introduced every three to five minutes into the tubing of a glucose intravenous infusion until the patient is brought to a plateau of light anesthesia. Deeply comatose patients require about two hours of therapy before reflexes, tone, respiration, pulse, and blood pressure return to normal; full consciousness is restored about eight hours later. Toxic signs such as vomiting or retching may be caused by overdosage or rapid infusion of either compound. However, the toxic state can be reversed by thiopentone sodium.

Brit. M. J. 4924:1238-1244, 1955.

Repair of Cystocele

Fibrous tissue proliferation over tantalum mesh gauze affords permanent support to cystocele repairs. Tantalum mesh, used in conjunction with the conventional Kennedy-type plication technic, successfully prevented recurrence of the defect in 9 patients observed for six to eighteen months, report Dr. Jack Moore and associates of Baylor University and the Jefferson Davis Hospital, Houston. The anterior vaginal walls remain well supported without sagging under strain, vesicourethral angles are maintained, and urgency and frequency of urination are improved. The prosthesis is inserted to extend posteriorly to the anterior vaginal fornix, anteriorly to the junction of the middle and posterior thirds of the urethra, and laterally under the reflected vaginal walls into the paravesical spaces.

Am. J. Obst. & Gynec. 69:1127-1135, 1955.

Writer's Workshop

As a feature of the annual meeting of the American Medical Writers' Association, an open workshop in medical writing will be held Saturday morning, Oct. 1, 1955, at the Hotel Jefferson, St. Louis. The program can be obtained from Dr. Richard M. Hewitt of the Mayo Clinic, Rochester, Minn. Instruction will be by members of the journalism faculties of the universities of Illinois, Missouri, and Oklahoma.

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of cases treated with Entozyme alone

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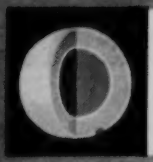

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*Ingels, A. H.: California Medicine 79:437, 1953.

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Detoxification of Isoniazid

High therapeutic concentrations of isonicotinic acid hydrazide can be obtained in the blood and spinal fluid without toxic reactions when the drug is administered with glutamic acid. Dr. Francesco Cedrangolo of the University of Naples suggests that the common toxic effects of isoniazid are caused by the degradation product, ammonia, which combines with glutamic acid to form a nontoxic, nondissociable compound, glutamine. Preliminary human trials indicate that combinations of isoniazid and glutamic acid permit the use of amounts previously infeasible because of serious intolerances.

Sc. med. ital. 3:424-445, 1955.

Glossopharyngeal Breathing

A method of pumping air into the lungs with the aid of the mouth and throat structures may be taught to patients with poliomyelitis to permit greater freedom from mechanical equipment. Glossopharyngeal breathing, similar to gulping or frog breathing, is described by Dr. Clarence W. Dail and associates of the College of Medical Evangelists, Los Angeles, as a pumplike action of the lips, mouth, tongue, pharynx, soft palate, and larynx so that air is accumulated within the buccal cavity and allowed to escape passively through the opened larynx. Some patients with no breathing ability at all are able to use this method to remain free of respiratory equipment for variable periods of time. Others use the technic for assistance in breathing and for coughing and talking.

J.A.M.A. 158:445-449, 1955.

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Antibiotic Effect on Herpes

Aureomycin has significant antiviral properties when incubated in vitro with cultures of herpes simplex. A viral strain isolated from a human corneal ulcer was inactivated by 2 to 5 mg. per cubic centimeter of Aureomycin borate and slightly inhibited by 2 mg. per cubic centimeter of Puromycin, report Drs. Ruth G. MacKneson and H. L. Ormsky of the University of Toronto. Achromycin, chloromycetin, erythromycin, and magnamycin had no antiviral effects. The in vitro results indicate that ophthalmic solutions and ointments of aureomycin may effectively neutralize free virus within the conjunctival sac.

Am. J. Ophth. 39:689-691, 1955.

Dangers of Eye Irradiation

Irreversible ocular lesions may be induced in eyes exposed to beta radiation. Dr. George R. Merriam, Jr., of the Memorial Center, New York City, suggests that high dosage schedules of radiotherapy to the eye be reduced so that surface doses are no greater than 5,000 roentgen equivalent physical (r.e.p.) in the treatment of benign lesions. Irradiation-induced lesions such as telangiectasis and keratinization of the conjunctiva, atrophy of the sclera, superficial punctate keratitis, corneal vascularization and scarring, iritis, iris atrophy, and cataract formation have appeared several months to fifteen years after exposure to 2,300 to 33,000 r.e.p.

Arch. Ophth. 53:708-716, 1955.

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Enzyme Control of Edema

The hyperergic inflammatory process elicited by injections of dextran in rats may be inhibited or decreased by the administration of Parenzyme or chymotrypsin. Massive edema of the extremities disappears after injections of the proteolytic enzymes but is uncontrolled by cortisone, epinephrine, or antihistamine, report Dr. Herman Cohen and associates of the Princeton Laboratories, Inc., Princeton, N.J. Pretreatment with intraperitoneal or subcutaneous injections completely prevents formation of dextran-induced edema whereas postedema treatment with the enzymes causes regression or diminution of the fluid.

Proc. Soc. Exper. Biol. & Med. 88:517-519, 1955.

Diabetic Sulfhydryl Levels

Although blood levels of plasma sulfhydryl are slightly reduced in patients with diabetes mellitus, no correlation can be established between the absolute levels of blood sugar and the sulfhydryl concentrations; no changes have been observed in nonprotein sulfhydryl. Dr. Elaine P. Ralli and associates of the New York University–Bellevue Medical Center, New York City, report that daily doses of 1000 μg. of vitamin B_{12} given for six to eighteen months do not alter the sulfhydryl levels. Patients with cirrhosis of the liver have the greatest reduction in sulfhydryl concentrations.

Proc. Soc. Exper. Biol. & Med. 88:646-649, 1955.

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Vitamin D	400 U.S.P. Units	Calcium (in $CaHPO_4$)	250 mg.
Thiamine Mononitrate (B_1)	2 mg.	Phosphorus (in $CaHPO_4$)	190 mg.
Riboflavin (B_2)	2 mg.	Dicalcium Phosphate Anhydrous ($CaHPO_4$)	869 mg.
Niacinamide	7 mg.	Iron (in $FeSO_4$)	6 mg.
Vitamin B_{12}	1 mcgm.	Ferrous Sulfate Exsiccated	20 mg.
Vitamin K (Menadione)	0.5 mg.	Manganese (in $MnSO_4$)	0.12 mg.
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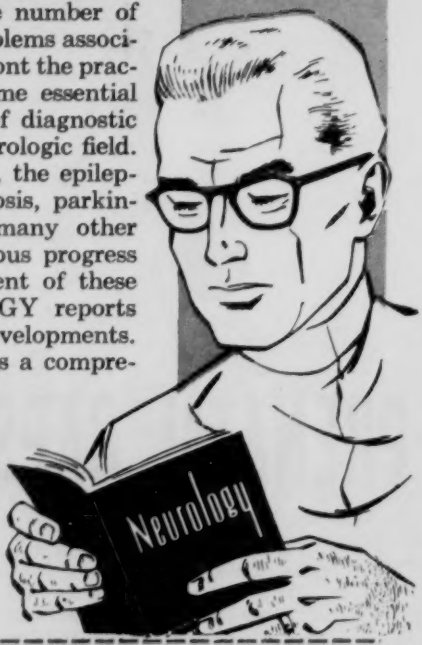

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Hormone Therapy of Migraine

Attacks of migraine headache in women may be prevented or ameliorated by prolonged administration of methyl testosterone. The regimen suggested by Dr. Robert C. Moehlig of Wayne University, Detroit, is 10 mg. given daily for fourteen weeks, then every other day for an additional eight weeks, and finally every third day for eight or more weeks. The treatment must be carefully supervised to prevent such undesirable effects as hirsutism, obesity, acne, and voice changes. Prolonged administration of testosterone may cause thyrotoxicosis in goiter patients and may also decrease the carbohydrate tolerance of diabetic patients.

J. Michigan M. Soc. 54:577-601, 1955.

Substitute Gastric Pouch

Jejunal segments may be anastomosed to form a physiologic substitute for the stomach in gastrectomized dogs. The technic described by Dr. Davide Riva of Florence, Italy, includes anastomosis of 1 jejunal segment, folded like a gunbarrel, to the duodenum and section of the 2 portions of the afferent and efferent loops, the former being enterostomized to the esophagus and the latter to the remaining intestine. The substitute reservoir provides a capacity similar to that of the stomach, physiologic retention of food, and adequate exposure of the gastric contents to the biliary-pancreatic enzymes of the duodenum.

J. Internat. Coll. Surgeons 23:588-593, 1955.

Detection of Lupus Cells

A recently devised technic may obviate tedious microscopic searching for lupus cells by concentrating the pathognomonic cells from a fresh drop of blood from a patient with lupus erythematosus. Aggregates of nonviable leukocytes act as a substrate upon which lupus cells tend to concentrate, explain Drs. I. Snapper and Daniel J. Nathan of Beth-El Hospital, Brooklyn. The substrate is prepared from thick smears of leukemic blood or by placing a drop or two of normal venous blood within a ringed area on a glass slide and incubating the slide in a moistened petri dish to promote clot formation and separation of leukocytes. Such slides are usable up to ten days after preparation. A drop of blood from a suspected lupus patient is placed on a cover slip and inverted in a hanging drop position over the leukocyte substrate and incubated another hour. When the cover slip is removed, the clot is usually adherent; excess serum is tapped off and the slide is rapidly air dried and stained with Wright or Giemsa method.

J. Invest. Dermat. 24:473-476, 1955.

CORRECTION

In the Short Report entitled "Supplement for Infant Diet" (*Modern Medicine*, June 1, 1955, p. 236), the amount of lysine to be added is 100 mg. per kilogram, not 100 gm.—Ed.

Meticorten for Dermatoses

Complete involution of lesions may occur in patients with acute disseminated lupus erythematosus, pemphigus vulgaris, exfoliative dermatitis, and atopic dermatitis, after the administration of Meticorten, a synthetic steroid. The drug is 4 to 5 times as active as cortisone, hydrocortisone, or corticotropin without producing frequent or severe side effects, reports Dr. Harry M. Robinson, Jr., of the University of Maryland, Baltimore. An initial daily dosage of 60 to 80 mg. divided into 4 parts is given for two or three days after improvement begins and then gradually reduced by 5 mg. every three to four days until a maintenance dose is reached—usually 15 to 20 mg. daily.

J.A.M.A. 158:473-475, 1955.

Sequelae to Adrenalectomy

Although temporary remission of metastatic carcinoma may occur after bilateral adrenalectomy, the ensuing hormonal imbalance may induce compensatory pituitary overactivity. In some patients pituitary stimulation following adrenalectomy produces intensification of the endocrine pattern found in individuals with untreated malignancies, reports Dr. Agnes Burt Russfield of the Massachusetts General Hospital, Boston. Histopathologic examination of pituitary and other endocrine glands from patients with Addison's disease or from individuals after bilateral adrenalectomy suggests a possible relationship between amphophil cells and the production of ACTH, thyrotropin, gonadotropin, and growth hormone.

Cancer 8:523-537, 1955.

Antiemetic for Children

Chlorpromazine may control vomiting of children, caused by various conditions. Doses of 0.5 mg. per kilogram intramuscularly, 2 to 3 mg. per kilogram as a suppository, or 1 mg. per kilogram orally induce prompt cessation or improvement of emesis, obviating the need for parenteral fluids, report Dr. C. W. Daeschner and associates of Baylor University and Jefferson Davis Hospital, Houston. The drug is particularly beneficial for vomiting caused by infectious diseases, radiation or chemotherapy of malignancies, and nonspecific gastritis, but is of no value for patients with organic obstructions.

J. Dis. Child. 89:525-530, 1955.

Micrococcal Nasal Carriers

A significant percentage of hospital personnel may be permanent carriers of pathogenic strains of *Micrococcus pyogenes* var. *aureus*. Monthly bacteriologic studies of nasal smears from 161 hospital employees revealed that 59% harbored micrococcus of all kinds and that 25% carried coagulase-positive strains, report Dr. Mark H. Lepper and associates of the University of Illinois, Chicago. Repeated monthly cultures demonstrated that all individuals, on one or more occasions, harbored micrococci and that 76% had at least 1 coagulase-positive strain. However, the individuals who originally harbored coagulase-negative strains usually lost the organisms within one month whereas those individuals harboring coagulase-positive strains tended to retain the carrier state indefinitely.

J. Lab. & Clin. Med. 45:935-942, 1955.

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Drug for Addison's Disease

Butazolidin appears to have sufficient sodium- and water-retaining effects to control the symptoms of adrenal cortical insufficiency. Dr. James B. Gabriel and associates of the Veterans Administration Hospital, Brooklyn, and the State University of New York, New York City, report that substitution of Butazolidin for desoxycorticosterone acetate corrected sodium and water deficits for prolonged periods of time in a patient with Addison's disease. The drug increased plasma volume by 7 and 12% in 2 healthy individuals and by 25% in the patient with adrenal insufficiency. Sodium and water retention last only during the first four days of treatment of healthy subjects.

Metabolism 4:119-128, 1955.

Effects of Contact Lenses

Relatively anaerobic conditions imposed by contact lenses interfere with corneal metabolism and may lead to corneal edema and increases in optical density and thickness. Dr. George K. Smelser and D. K. Chen of Columbia University, New York City, find elevated concentrations of lactic acid in the cornea of guinea pig eyes fitted with unventilated lenses. Apparently, the inability of the cornea to obtain adequate oxygen leads to a high rate of corneal utilization of carbohydrate with decreased rates of glycogenesis and consequent accumulation of lactic acid. Increased lactic acid concentrations may inhibit the water-removing mechanism of the eye, causing water retention in the cornea.

Arch. Ophth. 53:676-679, 1955.

IN CONCEPTION CONTROL

"...WHEN THEIR LIVES DEPEND UPON IT"

Recently, Jackson predicted that in time the "jelly-alone" method "will find its own level of usefulness, but it should not be handed out to highly fertile parous women, particularly when their lives depend upon it, in the mistaken belief that it will protect them as fully as one of the combined methods (cap or sheath plus spermicide)."[1]

"The added protection of a diaphragm..."

Where pregnancy is not advised, Gamble[2] suggests a diaphragm. Others[3-6] credit the diaphragm-jelly method with reliability of 95% to 98%.[2,4]

Indications for the jelly-alone method

Although almost all women can wear diaphragms,[3] some do not use them for various reasons: ■ Relaxed pelvic floor[5,7] ■ Extensive cystocele or rectocele[5,6,7] ■ Intact hymen[3] ■ Short anterior vaginal wall[7] ■ Retroversion or anteflexion of uterus[7] ■ Complete prolapse[3] ■ Ignorance or unwillingness ■ Fear of impairing future fertility ■ Low parity[1,8,9]

Selective safety

For these, RAMSES VAGINAL JELLY* alone may be prescribed, as shown by Guttmacher et al.[8] In 325 parous women who had used the jelly-alone (RAMSES VAGINAL JELLY) method from 3 months to 3 years, *the unplanned actual pregnancy rate was only 10.82 per 100 patient-years of exposure,*[8] counting over 35% of pregnancies from admitted negligence.

Prescribing for the individual

Prescribe maximum protection with RAMSES® diaphragm, flexible, cushioned and comfortable, and RAMSES VAGINAL JELLY, in the RAMSES "TUK-A-WAY"® kit. Prescribe RAMSES jelly alone when indicated. *Both are accepted by proper Councils of the A.M.A.*

References: 1. Jackson, M. G.: Lancet 2:346 (Aug. 15) 1953. 2. Gamble, C. J.: Ann. New York Acad. Sc. 54:840 (May 2) 1952. 3. Greenhill, J. P.: Office Gynecology, ed. 5, Chicago, The Year Book Publishers, Inc., 1948. 4. Novak, E.: Textbook of Gynecology, ed. 3, Baltimore, The Williams and Wilkins Co., 1948. 5. Reich, W. J., and Nechtow, M. J.: Practical Gynecology, Philadelphia, J. B. Lippincott Co., 1950. 6. Council on Pharmacy and Chemistry of the A.M.A.: New and Non-official Remedies for 1954, Philadelphia, J. B. Lippincott Co., 1954. 7. Tietze, C.; Lehfeldt, H., and Liebmann, H. G.: Am. J. Obst. & Gynec. 66:904, (Oct.) 1953. 8. Finkelstein, R.; Guttmacher, A., and Goldberg, R.: Am. J. Obst. & Gynec. 63:664 (March) 1952. 9. Barnes, J.: Lancet 2:401 (Aug. 22) 1953.

Radiation Hypophysectomy

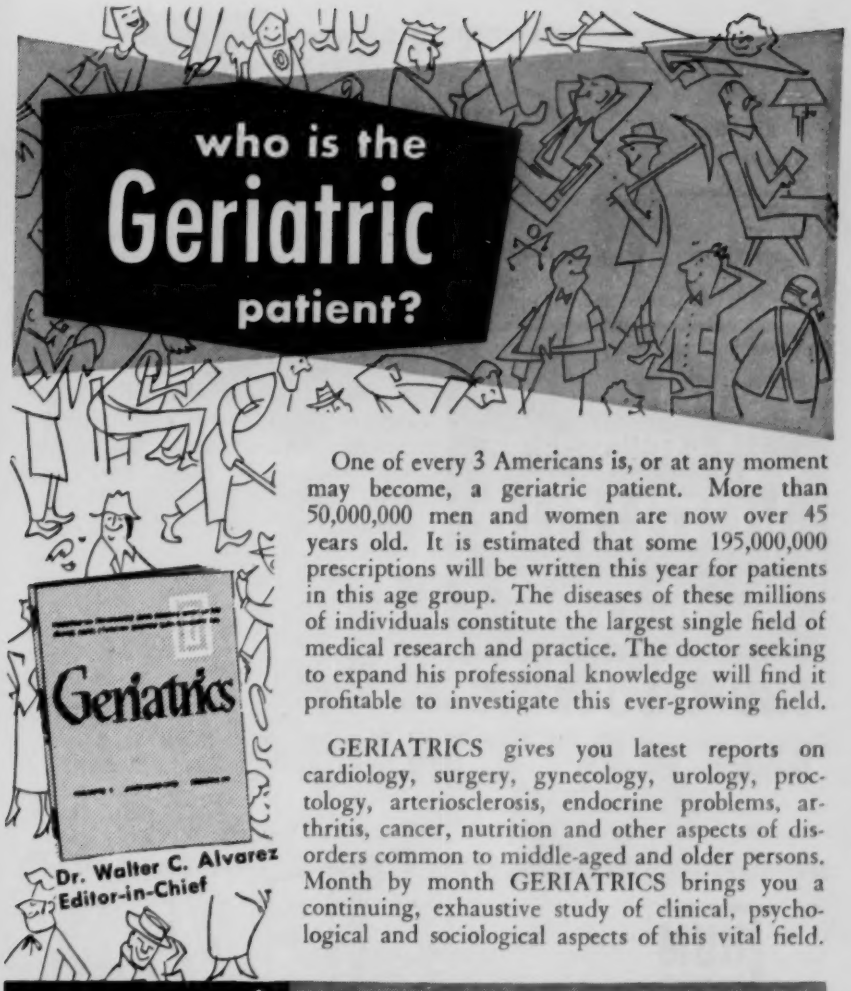
Implantation of radon seeds into the pituitary fossa through the nasal passage may effectively destroy the pituitary gland, obviating open surgery. Drs. A. P. M. Forrest and D. A. Peebles Brown of the Western Infirmary, Glasgow, believe that the simple technic will be a valuable adjunct for palliation of metastatic carcinoma and hormone-dependent tumors, and possibly for treatment of pituitary hyperactivity. A cannula, inserted through the nose and sphenoidal sinus, is guided by radiographic observation until properly aligned within the pituitary fossa. Usually 3 radon seeds, a dose of 15 mc., are introduced through the cannula.

Lancet 268:1054-1055, 1955.

Intrabronchial Radiogold

Large doses of radioactive colloidal gold may be injected into the submucosa of the bronchi of dogs without inducing deleterious radiation effects at the injection site. Administration of 30 to 100 mc. of Au^{198} into the intermediate bronchus produces microscopic radiation changes within the vasculature of the bronchus but the damage is not severe and the wall remains intact. Apparently, the colloid is rapidly mobilized to the lymph drainage areas, causing complete or focal necrosis of regional lymph nodes, explain Dr. Harold F. Berg and associates of the University of Louisville. Leakage of Au^{198} into the mediastinum may, however, provoke pericarditis, mediastinitis, or radiation necrosis of the lung.

J. Thoracic Surg. 29:497-501, 1955.



One of every 3 Americans is, or at any moment may become, a geriatric patient. More than 50,000,000 men and women are now over 45 years old. It is estimated that some 195,000,000 prescriptions will be written this year for patients in this age group. The diseases of these millions of individuals constitute the largest single field of medical research and practice. The doctor seeking to expand his professional knowledge will find it profitable to investigate this ever-growing field.

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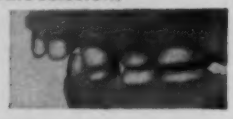
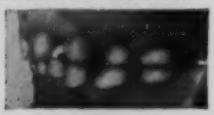
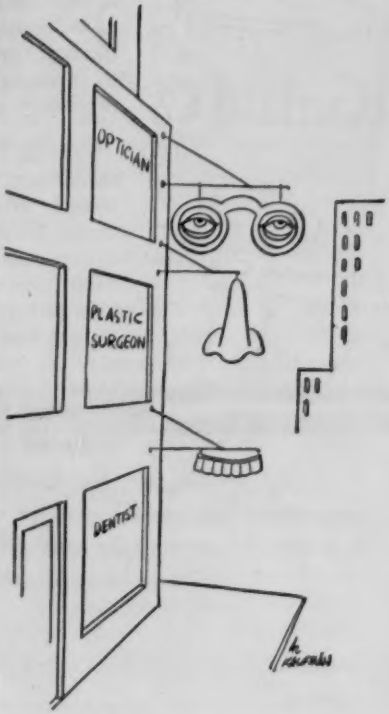




Atherogenic Factors

Hyaluronidase, which increases tissue permeability, appears also to promote atherogenesis in cholesterol-fed rabbits. Although cortisone enhances hypercholesterolemia in cholesterol-fed animals, the hormone inhibits atherosclerosis. On the other hand, hyaluronidase does not affect plasma lipid fractions but intensifies atherogenesis and hepatic deposition of cholesterol, report Dr. Chun-I Wang and associates of Mount Sinai Hospital, New York City. Apparently tissue permeability, in addition to the extent and duration of hypercholesterolemia, is a factor influencing atherogenesis.

Circulation Res. 3:293-296, 1955.



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1. Grayzel, H. G., Heimer, C. B., and Grayzel, R. W.: New York St. J. Med. 53:2233, 1953. **2.** Heimer, C. B., Grayzel, H. G., and Kramer, B.: Archives of Pediatrics 68:382, 1951. **3.** Behrman, H. T., Combes, F. C., Bobroff, A., and Leviticus, R.: Ind. Med. & Surgery 18:512, 1949. **4.** Turell, R.: New York St. J. Med. 50:2282, 1950. **5.** Marks, M. M.: Missouri Med. 52:187, 1955.

Biliary Tract Sphincters

Developmental studies of the sphincters choledochus and ampullae in men and subhuman primates indicate that the human biliary tract is not controlled by the autonomic nervous system. Dr. Edward A. Boyden of the University of Washington, Seattle, suggests that the concept of biliary dyskenesia, based on animal experimentation, is unsupported unless dysfunction can be found to be related to a hormonal mechanism. Both men and chimpanzees have well-developed intrinsic sphincters of the bile tract, but the choledochoduodenal junction in the animal is more complicated than in man and is intermediate in structure between man and laboratory mammals. Although the rate of emptying of the gallbladder in monkeys resembles that of man, the animal biliary tract structure is more closely simulated in cats.

Surgery 37:918-927, 1955.

Anthrax Vaccine

A new type of anthrax vaccine avoids 2 common dangers, serum sickness and infection from attenuated spores. Bacilli are grown on a chemical mixture containing no blood serum, and the culture is put through a special filter that passes antigen but removes all germs. The same principle may be applied to other infectious organisms, believes Dr. George G. Wright of Camp Detrick, Md. The vaccine has been given safely to 660 volunteers.

Management of Myotonia

Symptoms of dystrophia myotonica may be ameliorated by the oral administration of procaine amide. Electromyographic and ergographic determinations made after intravenous injection of the drug demonstrate abolishment of active myotonia, reduction of "needle" myotonia, but no neuromuscular block or appreciable alterations in percussion responses, report Drs. N. Geschwind and J. A. Simpson of the National Hospital, London. In contrast, active myotonia persists after treatment with d-tubocurarine or decamethonium although neuromuscular block is 80 to 90% complete. An initial oral dosage is suggested of 1 tablet, 0.25 gm., four times daily, to be increased by 2 tablets daily until the effective range is reached, usually from 4 to 6 gm. Transient anorexia, nausea, vomiting, or euphoria may be induced, but renal, hepatic, cardiac, and blood pressure changes do not occur.

Brain 78:81-90, 1955.

Books Received

THE MEDICAL SIGNIFICANCE OF ANXIETY by Richard L. Jenkins, 46 pp. The Biological Sciences Foundation, Ltd., Washington, D. C., 1955. $1

HANDBOOK OF PEDIATRICS by Henry K. Silver, C. Henry Kempe, and Henry B. Bruyn, 548 pp. Lange Medical Publications, Los Altos, Calif., 1955. $3

ALCOHOLICS ANONYMOUS by anonymous authors, 2d ed., rev., 575 pp. Alcoholics Anonymous Publishing Co., New York City, 1955. $4.50

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"So do I," she agreed. "I've been telling him where to go for years."—B.P.S.

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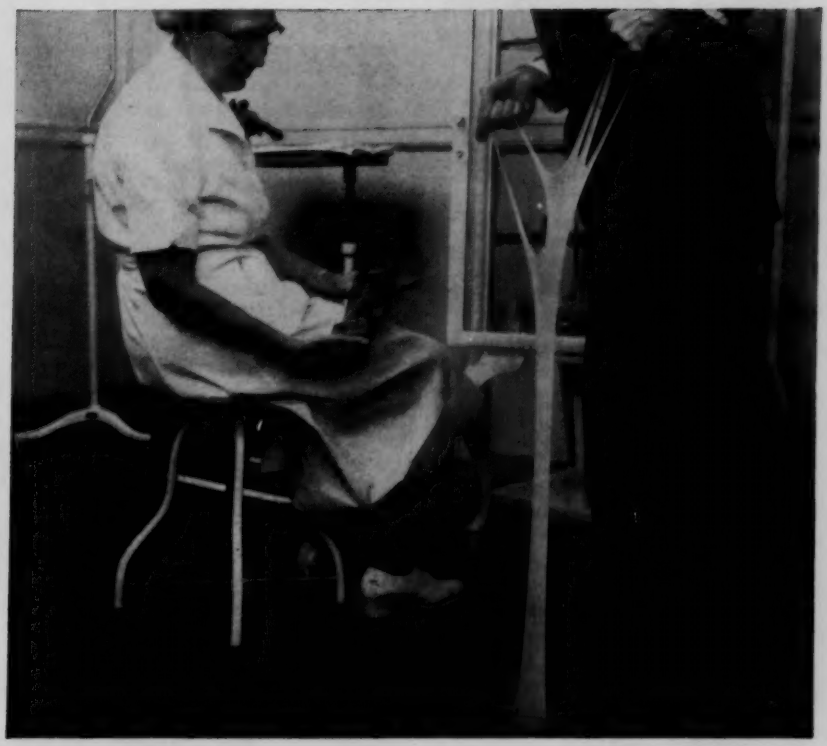

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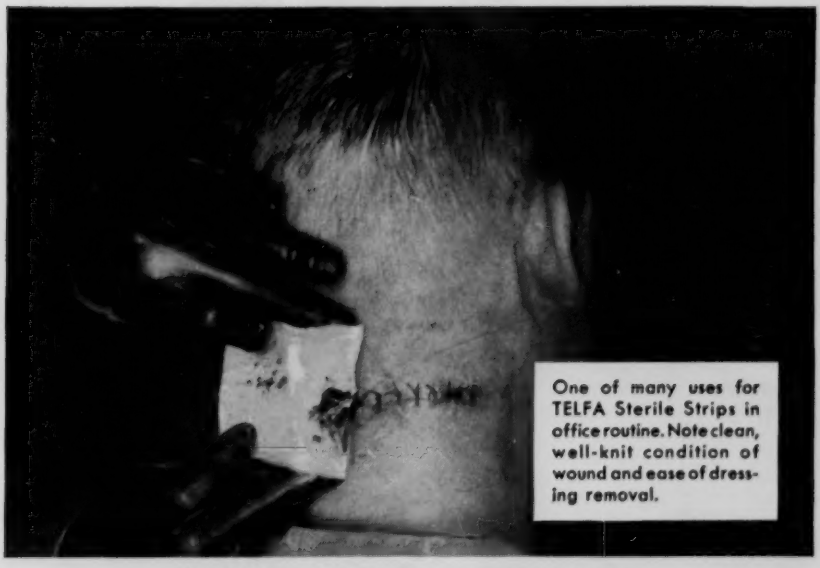

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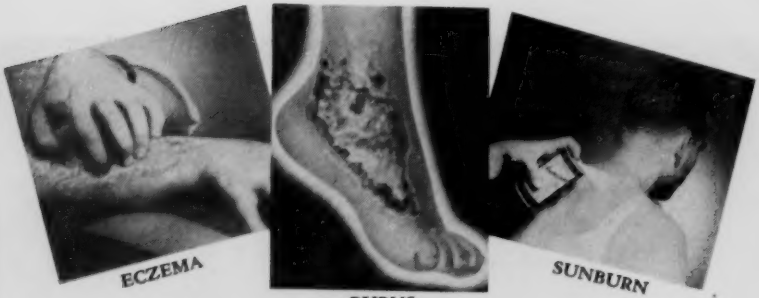

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